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STRENGTH
4 SUPER
STRATEGIES

Q&A
WITH DALLAS
MCCARVER

CARDIO
THE SCIENCE
OF FASTING

5 WAYS
TO BURN MORE
FAT AT REST

LAST CHANCE AT LEAN

» Get fit for fall with this no-nonsense lifting and cardio plan



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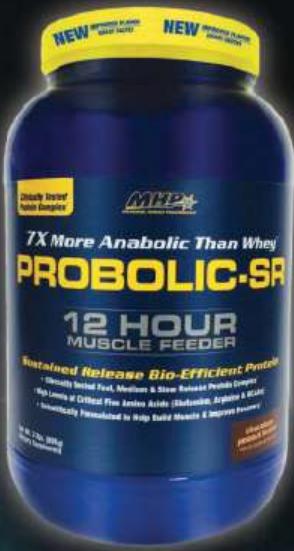
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MMA HEAVYWEIGHT CHAMP

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MHP's commitment to clinical research, quality and efficacy makes it the trusted brand of champions. Whether you're looking for a protein, pre-workout, post-workout, testosterone booster or other performance enhancing products, MHP's Clinical Strength Supplements will deliver the results you're looking for – guaranteed!

TRUSTED BY CHAMPIONS



PROBOLIC-SR – Clinically Tested Protein Blend

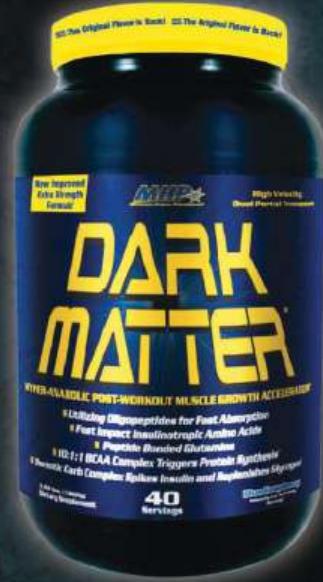
PROBOLIC-SR is a clinically researched protein blend that has been shown to be an incredible 7x more anabolic than whey protein and superior for recovery. The clinically tested blend consists of fast, medium and slow releasing proteins and provides a massive dose of the Critical Five Amino Acids (BCAAs, glutamine and arginine), which are known to be crucial for muscle growth. PROBOLIC-SR also features a patented Sustained Release Micro-Feed Technology that allows for a continual supply of amino acids to your muscles for up to 12 hours!

- **7X MORE ANABOLIC THAN WHEY PROTEIN**
- **FORMULATED TO BUILD MUSCLE & IMPROVE RECOVERY**
- **FAST, MEDIUM & SLOW RELEASE PROTEIN COMPLEX**
- **PATENTED 12 HOUR MUSCLE FEEDER TECHNOLOGY**

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Post-workout supplementation is critical if you want to maximize muscle building and speed recovery. After a hard workout your body is in a depleted catabolic state. DARK MATTER provides a fast and powerful nutrient infusion during the critical 1-hour post-workout window of opportunity. Featured in this formula is a powerful synergistic combination of fast acting hydrolyzed peptides rich in glutamine and a leucine loaded 10:1:1 BCAA complex to maximize muscle building and recovery. DARK MATTER also contains highly functional carbohydrates from potato starch, waxy maize and glucose polymers, plus novel insulin optimizers to help maximize insulin spiking and reload your muscles with glycogen. Lastly, a multi-source creatine complex is also present for enhanced muscle volumizing and ATP replenishment to refuel your muscles.

- **LEUCINE LOADED 10:1:1 BCAA COMPLEX TRIGGERS PROTEIN SYNTHESIS**
- **GLUTAMINE RICH, FAST HYDROLYZED PEPTIDES OPTIMIZE RECOVERY**
- **OSMOTIC CARB COMPLEX SPIKES INSULIN & REPLENISHES GLYCOGEN**
- **MULTI-SOURCE CREATINE COMPLEX RESTORES CREATINE & ATP STORES**



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- **2nd MESSENGER TECHNOLOGY IMPROVES RECEPTOR SIGNALING**



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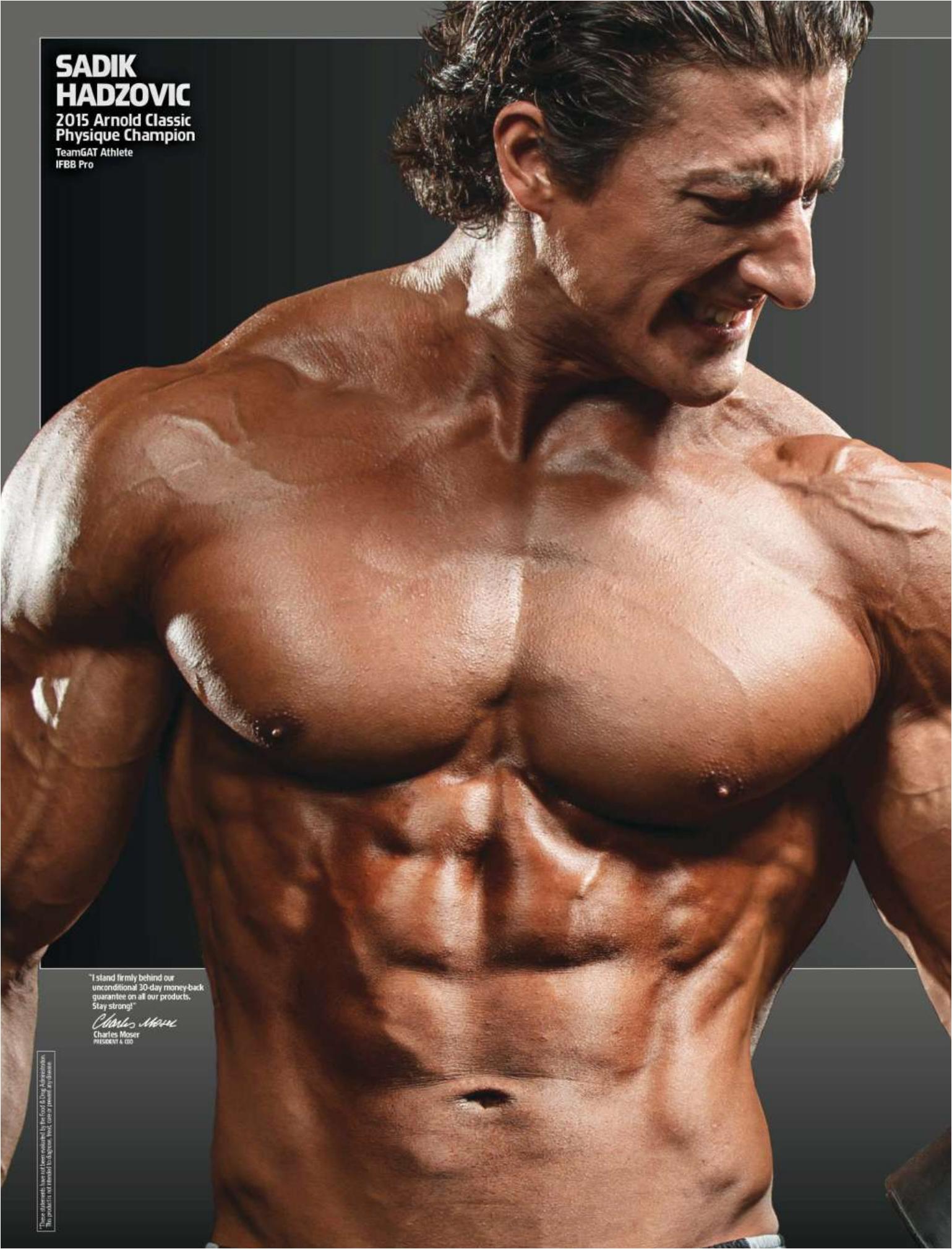
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ON THE COVER: Optimum Nutrition's Steve Cook
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5.3 LBS. LEAN MUSCLE

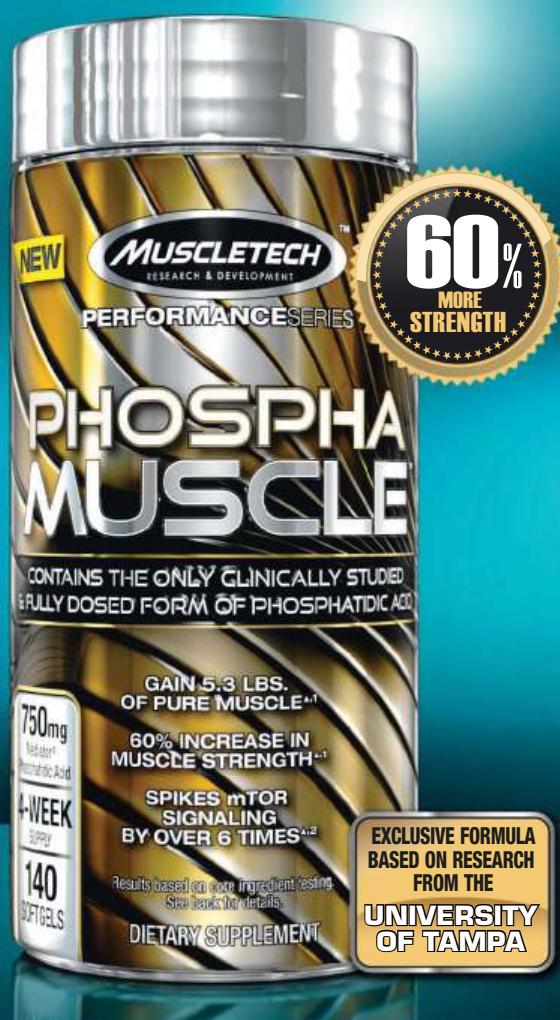
In published research from The University of Tampa, subjects taking a 750mg clinical dose of phosphatidic acid built 5.3 lbs. of solid lean muscle in 8 weeks while training just 3 times per week – double that of the placebo group!

60% MORE STRENGTH

In the same gold-standard study, subjects increased their l-rep max strength on the leg press by an incredible 60% in 8 weeks.

6X GREATER mTOR ACTIVATION

In a separate phase of the same study, pre-clinical in-vitro research also showed that phosphatidic acid activated the mTOR enzyme – the primary regulator of muscle growth in the body – by over 6 times compared to baseline.



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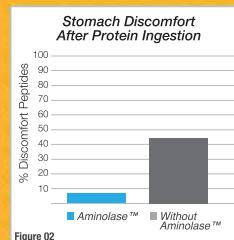
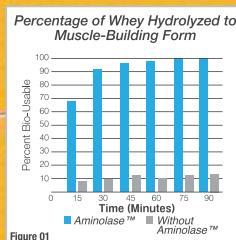
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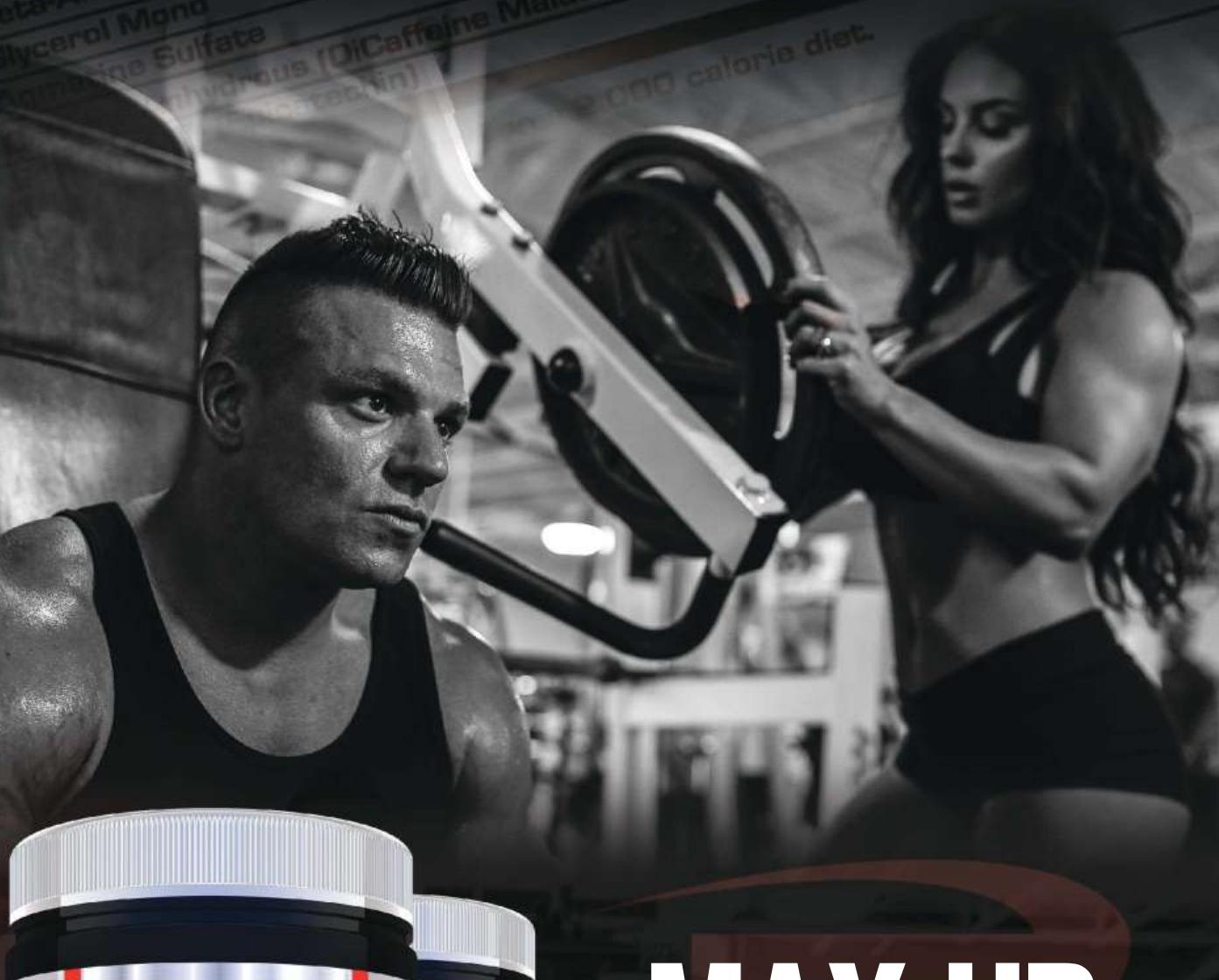
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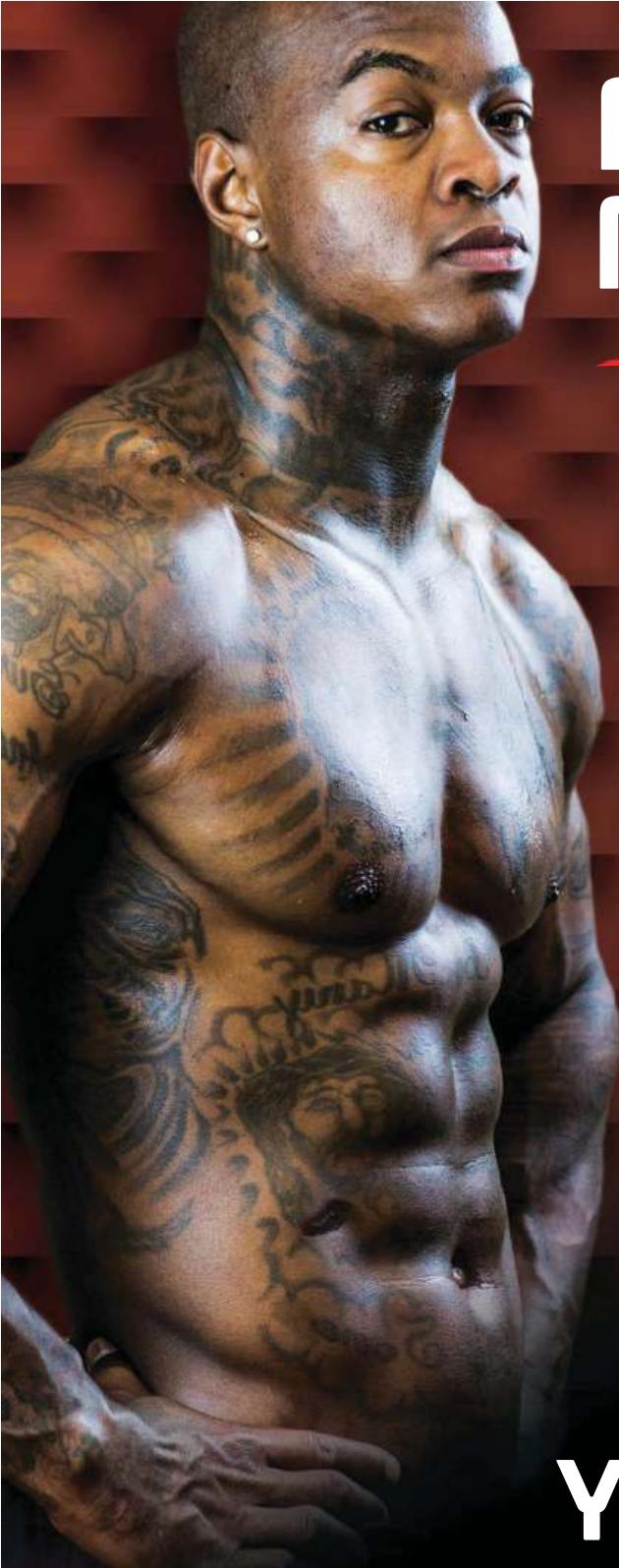
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BODY SHOP

SUPPLEMENTS / NUTRITION & HEALTH / TRAINING

GROW WHILE YOU SLEEP

» Pounding protein powder after training has long been recommended, as has mixing a scoop in water before workouts and even first thing in the morning to get your muscle-building day off to a good start. But there's one other critical time you should utilize your shaker bottle: bedtime.

In a recent registered clinical trial, scientists from the Netherlands provided compelling evidence that weight training combined with pre-bedtime casein protein supplementation significantly boosts muscularity and strength over training with a placebo. As published in *The Journal of Nutrition*, subjects were randomly assigned to a pre-bedtime protein supplement (27.5 grams casein protein, 15 grams carbohydrates, 0.1 gram fat) or placebo group and participated in a supervised resistance-training program entailing three weekly workouts for 12 weeks. Before and after the training program, changes in muscularity were evaluated using

whole-body dual-energy X-ray absorptiometry, limb computed tomography (CT) scans and muscle biopsies (in other words, really exact stuff). Changes in strength were assessed regularly by one-rep max strength testing.

Remarkably, subjects in the pre-bedtime casein protein supplement group were found to have a 26 percent greater increase in overall strength and a 75 percent increase in quadriceps muscularity (indicated by a measure of cross-sectional area) versus the placebo group. Talk about finishing your day on a strong note!

ACTION POINT: If you train regularly and want to maximize increases in strength and muscularity, try taking 25 to 50 grams of micellar casein or a casein blend immediately before hitting the sack. This is in addition to the 25 to 50 grams of a high-quality protein blend or whey protein isolate you should be consuming 30 to 60 minutes pre- and immediately postworkout.



Finally, a nighttime snack that promotes the right kinds of gains.

BODY SHOP



MAX STACK

TRAIN HARDER, TRAIN BETTER

Start off your workout on the right foot by including these ingredients in your preworkout cocktail. More energy and higher intensity will ensue.

Beta-Alanine: This preworkout superstar combines with the amino acid histidine in the body to form carnosine, which has been shown to enhance muscle hypertrophy, power, strength and endurance as well as aid in fat burning. You'll feel beta-alanine's effects right away in a tingling sensation in the skin and with a jolt of energy that may help you perform more reps with more weight.

L-Citrulline Malate: This popular ingredient has forged a strong reputation for delaying fatigue during hard workouts. You'll notice a greater pump when taking citrulline malate because it's a precursor to nitric oxide production. But it's not just a feel-good supplement;

citrulline has been shown in countless studies to enhance endurance and strength during training, which can lead to long-term gains in these areas when taken consistently. Citrulline malate also delays pH buildup in the muscles to improve recovery.

Epicatechin: One of the newer muscle-building supplements on the block, this flavonol found in dark chocolate boasts strong antioxidant properties and recent research suggests it may be highly anabolic. Specifically, epicatechin may help inhibit the body's production of myostatin, which limits how much muscle you can carry (so being deficient is a good thing). More research is still needed to prove epicatechin's mass-building benefits, but the data look promising.

Find these ingredients and others in:
Prime Nutrition Max-HP

VITAL NUTRIENT RECOVER-E

A recent debate in the scientific literature addresses the impact of antioxidant vitamins like vitamin E on muscular performance and growth. One thing is certain: Deficiencies in vitamin E can lead to significant health and performance consequences.

An article published in *Free Radical Biology & Medicine* provides convincing evidence that maintaining adequate levels of vitamin E in skeletal muscle is necessary for muscle repair and recovery. Vitamin E is fat soluble, and since the membranes of muscle cells are primarily comprised of fats, vitamin E is readily taken up by muscle cell membranes and protects them from free radicals. Such a protective environment enables enhanced muscle repair and recovery. In contrast, low vitamin E levels (as observed in the elderly) can lead to "frailty syndrome" characterized by a loss of muscle strength. Sounds like something you might want to avoid, eh?

ACTION POINT: During periods of heavy training, your vitamin E needs may increase. In an effort to keep your skeletal muscle vitamin E levels topped off, we generally recommend taking a single 400 IU dose of natural vitamin E in the form of d-alpha-tocopheryl with your breakfast every morning.





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42%

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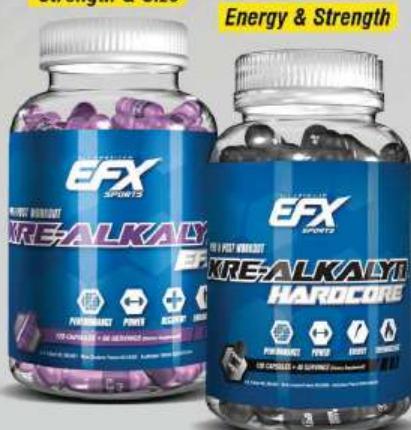


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NUTRITION
& HEALTH

BODY SHOP



**CHEAT DAYS
BINGE GONE BAD**

» You only live once, so feel free to pig out on your favorite foods every now and then. Just make sure you don't stray too far from your diet for too many consecutive days. Researchers at Virginia Tech (Blacksburg) found that after just five days of indulging in sausage biscuits, macaroni and cheese and glazed twists, a group of college students showed a reduced ability to effectively metabolize nutrients at the muscular level. Their ability to oxidize glucose in particular was significantly hampered, and researchers warn this could negatively affect insulin levels in the body and lead to issues with diabetes. So if you're thinking of taking a break from clean eating temporarily — like, say, while on vacation — you might want to make it a weekend trip, not a weeklong one.



FIT LIST

THE PRICE OF PUMPING IRON

» Staying in shape doesn't have to cost much, but it can certainly get pricey for those who demand a cutting-edge training facility rich in amenities and in a prime location. As part of its recent "Best and Worst Cities for an Active Lifestyle" list, WalletHub.com broke out the top five most expensive and least expensive areas for fitness club memberships. Frugal New Yorkers may want to consider free workouts in Central Park.

**HIGHEST MONTHLY
FITNESS CLUB FEES**

1. New York
2. Washington, D.C.
3. Scottsdale, Ariz.
4. San Francisco
5. Jersey City, N.J.
5. Corpus Christi, Texas

**LOWEST MONTHLY
FITNESS CLUB FEES**

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2. Santa Ana, Calif.
3. Reno, Nev.
4. Mesa, Ariz.
5. San Bernardino, Calif.





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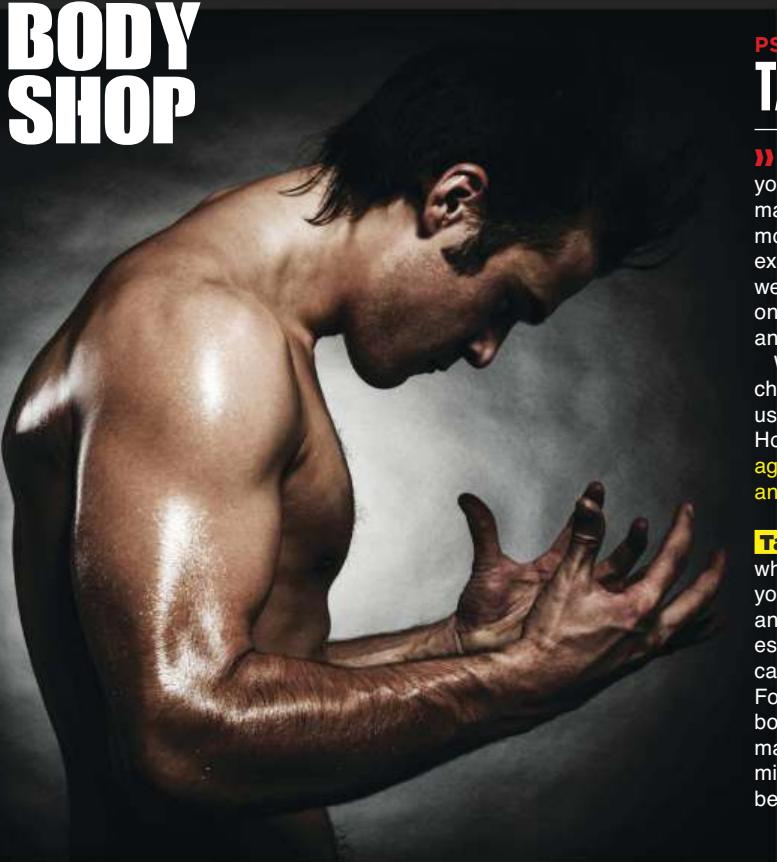
NO
PROPRIETARY
BLEND

25
G

PROTEIN
FROM WHEY
PROTEIN ISOLATE
PER SERVING

TRAINING

BODY SHOP



PSYCHED UP TALK TO YOURSELF

» Disagreeing with yourself when your own brain advises you to quit may be the ticket to enhancing your performance. In a recent study from the University of Kent (U.K.), motivational self-talk reduced cyclists' rate of perceived exertion (RPE) — that is, how hard they felt their bodies were working — and actually increased their performance on a cycling test compared to a control group that didn't use any self-talk intervention.

While the self-talk group cycled longer, not much changed physically; their markers of heart rate and oxygen use stayed the same as before they learned to use self-talk. However, they reported a lower RPE, meaning the **encouraging words blocked the negative signals from their bodies and allowed them to exercise up to 18 percent longer.**

Take-Home Point Changing what you say to yourself while training or competing manipulates how much effort you feel you're putting forth, which can help you last longer and perform significantly better. Such motivational messages can range from "Feeling powerful today" and "My legs can churn all day" to "I can do this!" and "Finish strong!" For the typical fitness buff who finds cardio workouts a tad boring, consider focusing on elements of your training that may be exciting — such as being with a community of like-minded people or the challenge of beating your personal best — and use self-talk based around these qualities.

— Greg Chertok, MEd, CC-AASP

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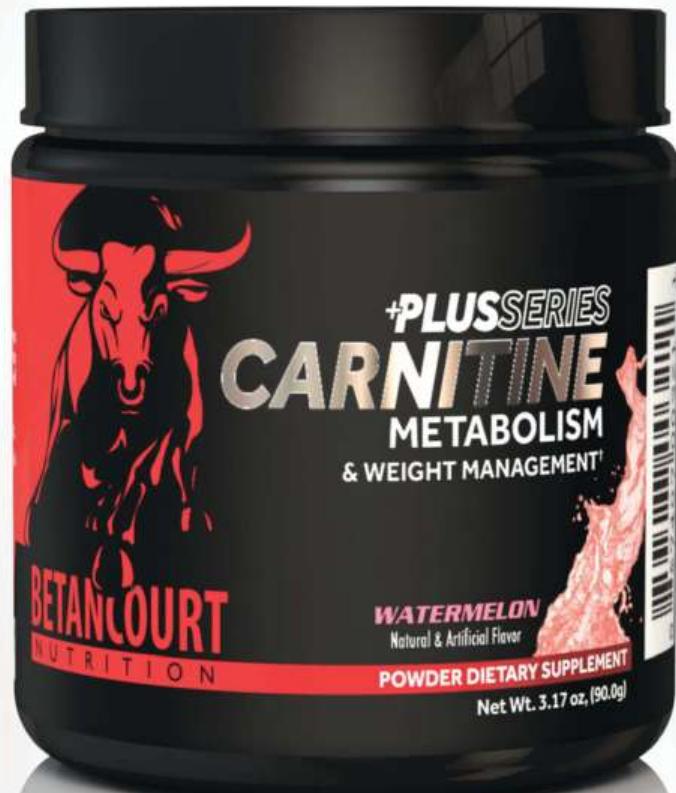
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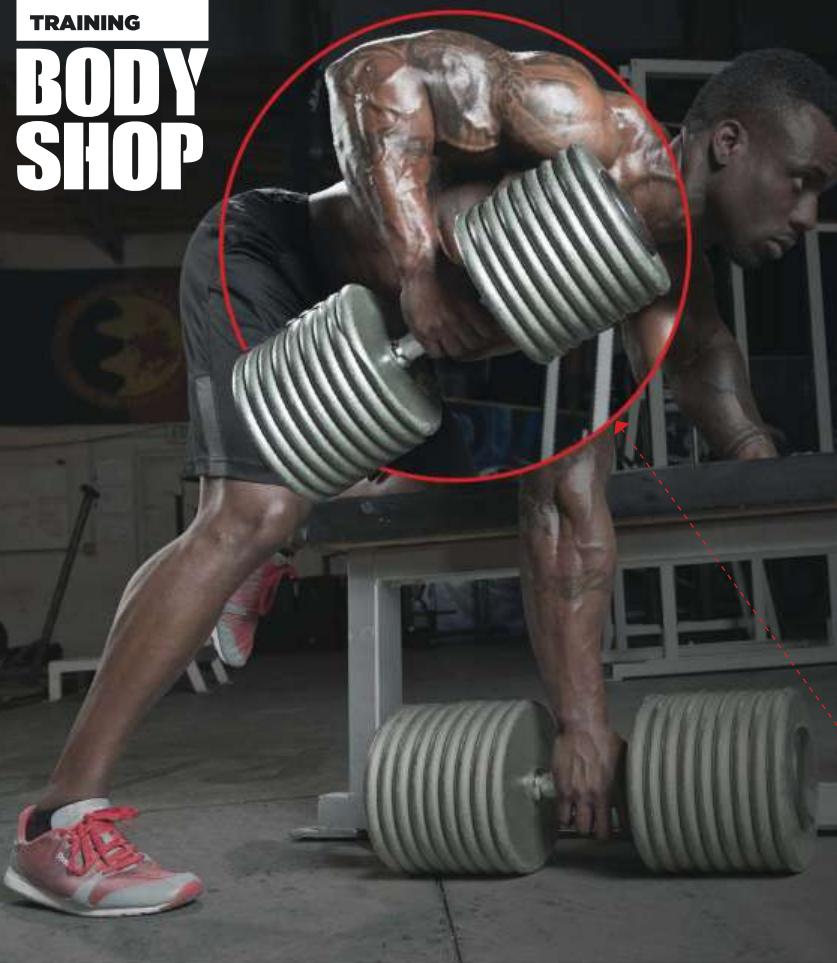


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QUICK FIX

**ONE-ARM
DUMBBELL ROW**

Simple solutions to widespread exercise errors.

THE FLAW: Not achieving full contraction.

THE FIX: The typical culprit here is going too heavy, which limits your range of motion at the top and keeps you from squeezing your shoulder blades together and properly thrashing the muscles of the middle back. Lighten the load and make sure your hand comes to at least chest level. Your elbow should bend well beyond 90 degrees with this move.

THE FLAW: Planting your foot too close to the bench, which compromises balance.

THE FIX: With one knee up on the bench, place the other foot two to three feet off to the side and slightly in front of your planted knee. This is a more stable position that allows you to pull more weight. When rowing with your right arm, think of aligning your left hand and knee (both on the bench) and right foot (on the floor) like a tripod.

THE FLAW: Opening the chest.

THE FIX: Yes, pulling the dumbbell high for a full range of motion is good, but not if you do it by twisting your torso to that side. Keep your chest facing down throughout the move. At the top your shoulder will naturally open a bit as you contract hard to pull your scapula in, but there should be no rotation in your lower torso. ■

Photo by Robert Reiff

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FOREARMS TO THE FOREFRONT

Build better arms — and increase your pulling power — with this intensive tack-on forearms workout.

BY MICHAEL BERG, NSCA-CPT

Let's face it, most people give about as much thought to their forearm training as Roger Goodell does to public opinion about his job performance or Kim Kardashian does to ... well, anything other than Kim Kardashian.

But clueless sports commissioners and self-absorbed reality-show divas aside, for fitness buffs, such a careless dismissal of this smaller yet critical body part can have a very negative impact on one's physical development. It's not just about building complete arms, either: Weak forearms not only directly affect how much you can pull on back day but can also compromise your performance during any lift that requires you to firmly grasp a barbell or dumbbell.

Now, unlike America and its often-scorned pop-culture icons, we're not here to judge you. If you've conveniently forgotten about your forearms up to this point, we'd instead like to help you rectify the oversight, starting with this once-a-week, four-exercise regimen. It can be tacked onto the end of any workout but pairs especially well with back, shoulders, chest, or triceps and biceps.

1. STANDING BEHIND-THE-BACK WRIST CURL

Set up a barbell on the pins of a power rack at about hip level. Facing away from the bar, back up so that you can grasp it with both hands just outside shoulder width with a palms-facing-back grip. Lift the bar off the pins and take a step forward, elbows straight and arms down so the bar rests across your glutes. From here, moving only at your wrist joints, curl the bar as high as you can, then lower it, allowing the bar to roll toward the ends of your fingers before curling it up again. If you reach failure, simply bend your knees to set the bar back down on the pins.

2. REVERSE-GRIP ONE-ARM CABLE WRIST EXTENSION

Grasp a D-handle attached to the upper pulley with a palms-up grip and

bring your arm down to your side, elbow slightly bent so your hand is just in front of your hip. From here, moving only at the wrist joint, pull the handle down as far as you can, then allow it back up under full control. The range of motion is small, but you should feel the action in the muscles running along the top of your forearm. Repeat for reps, then switch sides.

3. PLATE HAMMER WRIST CURL

Kneel alongside a flat bench and lay your forearms across it, holding a weight plate at the 9 o'clock and 3 o'clock positions, or the 10 o'clock and 2 o'clock positions if you are stronger. Move your wrists up and down to lift and lower the plate. For most people, a good place to start would be 25 pounds.



| EXERCISE | SETS | REPS |
|--|------|----------------|
| Standing Behind-The-Back Wrist Curl | 4 | 20, 15, 12, 10 |
| Reverse-Grip One-Arm Cable Wrist Extension | 3 | 10-15 per arm |
| Plate Hammer Wrist Curl | 2 | 15 |
| Plate Pinch Farmer's Walk | 1 | To failure |

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FASTED CARDIO: YEA OR NAY?

M&P dissects existing research on pre-cardio nutrition to help you find your fat-burning sweet spot.

BY LARA MCGLASHAN, MFA, CPT

Ask any collection of gym rats milling around the squat rack about the best way to burn fat and you'll find two camps, those who swear by fasted cardio — done on an empty stomach first thing in the morning — and those who don't. So what's the deal? Does fasted cardio work, and if so, what exactly does it do?

The rationale for fasted cardio makes logical sense: When you fast (as you do when sleeping), your circulating blood sugar and glycogen stores fall. This drop in blood sugar is accompanied by a decrease in insulin levels, which should theoretically help the fat-burning process since insulin suppresses fat metabolism. Therefore, doing cardio on an empty stomach means your body needs to turn to another source of fuel. Fat seems a likely choice because it's dense, it's plentiful and (*grr*) it's always there. But unfortunately, muscle tissue is more readily broken down than fat in the absence of glycogen, which means fasted cardio could potentially be a catabolic activity. In fact, the *Strength and Conditioning Journal* cited that protein breakdown could actually double during fasted cardio. Yikes.

Logic notwithstanding, the hard

research on this subject is equivocal. On the pro side are studies like one published in the *British Journal of Nutrition* that showed participants who did fasted cardio burned 20 percent more fat than when they did cardio with a meal in their bellies. On the con side are studies like one from the *International Journal of Sport Nutrition and Exercise Metabolism* in which fed participants showed an increase in oxygen consumption (VO₂) and substrate utilization (fat usage) both during the workout and in the 12 to 24 hours postworkout versus participants who fasted.

Confused yet? The hard truth is that fat loss isn't as simple as a light switch that you can flip on and off depending on the kind of exercise you do. There are many other factors — metabolic, dietary and lifestyle — that come into play. A better way of looking at cardio and fat loss may not be within the workout itself but in your training week as a whole.

Fat loss really comes down to calories in versus calories out and, of course, a delicate balance of conscious nutritional decisions that fuel your body, build your muscle and stoke your metabolism. Choosing activities with a high metabolic deficit, like HIIT,

produces an insane afterburn that lasts up to 48 to 72 hours postworkout and burns twice the fat of a steady-state workout in half the time. Do two to four HIIT workouts per week in conjunction with a solid strength-training program and you're on the road out of Fat City.

So why not do HIIT in a fasted state to burn even more fat? It sounds like a good idea, and your body will break down lots of fat during a HIIT session, but the rate of that breakdown will usually exceed your ability to utilize those free-ranging fatty acids, and if they're not used up they simply get repackaged into your fat cells. As for the afterburn, remember: For HIIT to be effective it should be done with all-out, maximal intensity. Training on an empty stomach often means a much reduced intensity level, however, so your HIIT might not be very burn-worthy and therefore less effective.

Where does that leave us? With a matter of preference. Some people prefer to work out on an empty stomach while others feel like they're going to bonk if they don't have a little breakfast. And while fasted cardio is not inherently bad for you, it probably isn't your best option when it comes to losing body fat. ■

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BODY BY BANDS

Think outside the box by adding elastic resistance to your training program for big increases in size, strength and power.

BY JOE WUEBBEN

Once upon a time, the popularity of elastic-band training suffered mightily as a result of the “guilt by association” theory. Rubber tubing tended to be relegated to the same dark corner of the gym as the 5- and 10-pound dumbbells, yoga mats and Bosu balls: equipment favored by those who couldn’t possibly care less about packing on muscle and getting strong as an ox. What the naysayers failed to realize is that elastic bands’ fastest-growing target market are athletes and fitness diehards looking to greatly enhance their strength, power and hypertrophy.

Remember this term: linear variable resistance, or LVR. That’s what elastic bands offer that barbells, dumbbells and kettlebells don’t. LVR is different from traditional resistance in that as a given exercise’s range of motion increases, so does the resistance applied on the muscle via the basic elastic properties of rubber bands.

The advantage here is undeniable. Greater resistance throughout the range of motion means more muscle fibers are recruited, which translates directly to both strength and size gains. But why not just go heavier with free weights to achieve greater resistance? Because of a biomechanical concept known as the strength curve of the muscle, which refers to the way a muscle’s strength changes over a range of motion, says renowned fitness expert Jim Stoppani, PhD, a huge proponent of elastic-band training. “Take a biceps curl, for example,” he says. “The biceps are weakest at the start of the exercise and strongest somewhere around the midpoint of the range of motion. When doing curls with a free weight, you’re limited to how much weight your biceps can handle

BAND OF BENEFITS

Linear variable resistance isn’t the only advantage of training with elastic bands. Here are a few others:

CONSTANT TENSION Similar to cables, bands don’t allow the muscles to take a break in “dead” points along the range of motion as with some free-weight exercises (picture the top of a dumbbell flye). Tension stays on the muscles throughout the entire rep.

MAXIMUM PLANES OF MOVEMENT With free weights you’re forced to move the weight against the pull of gravity, and with machines the path of motion is fixed. Neither of these limitations exist with bands. As long as you move the ends of the band away from its anchor point, you can change the direction of pull any time you see fit.

HIGHLY PORTABLE At home, a set of bands can be kept in a closet or under the bed. When traveling, a few bands will fit easily into your luggage.

INEXPENSIVE A complete set of elastic bands offering hundreds of pounds should run you no more than about \$200. Try Harbinger’s HumanX PowerAmp xX bands (vitaminshoppe.com).

BANDS IN ACTION

Elastic bands can fit seamlessly into virtually any existing lifting program. You can either attach bands to the ends of the barbell for bench presses, squats or deadlifts (or any number of other barbell moves) or use them as the sole source of resistance for just about any exercise you currently do with free weights. Here’s a sample elastic-centric workout to illustrate the versatility of bands.

Upper-Body Banded Workout

| EXERCISE | SETS | REPS |
|---------------------------------|------|-------|
| Barbell Bench Press with Bands | 4 | 6-8 |
| Standing Band Chest Press | 4 | 10-12 |
| Barbell Row with Bands | 4 | 6-8 |
| Band Kneeling Pulldown | 4 | 10-12 |
| Band Shoulder Press | 4 | 8-10 |
| Band Lateral Raise | 4 | 10-12 |
| Band Overhead Triceps Extension | 4 | 10-12 |
| -superset with- | | |
| Band Curl | 4 | 10-12 |

at the beginning of the curl. As a result, your biceps aren’t receiving adequate resistance at their strongest point.”

A Truman State University (Kirksville, Mo.) study found a significant increase in bench-press strength and power in individuals who combined free weights and bands compared to those using only free weights. And a study from the University of Wisconsin-La Crosse found similar results with respect to lower-body training.

“Anecdotal and scientific lab reports show that bands produce gains in power, strength and size,” says Stoppani. “You could train with bands only and see great results or combine them with free-weight training, which I prefer. Either way, the benefits of bands are indisputable.” ■

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Scheett, et al. Consuming branched-chain amino acid supplement during a resistance training program increases lean mass, muscle strength and fat loss. Journal of the International Society of Sports Nutrition 2009, 6(Suppl 1):P1

Scheett et al. Consuming branched-chain amino acid or whey protein in combination with hypocaloric diet differentially effects muscle mass, body fat and strength in trained subjects. Manuscript in Process.



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THE SCIENCE OF SPEED

Looking to boost your speed and conditioning? Find a hill and get to work.

BY MIKE CARLSON, NASM-CPT, CFL1

Most people think of speed as an attribute: something you're born with or that you develop through years of hard work. But speed is actually an *ability*. Even if you have the physical underpinnings — the metabolic conditioning and muscle strength — your body still needs to *learn* how to go fast.

"It's all about neurological reprogramming. All the systems are ready to fire, but they haven't done it before so you have to teach them," says Robert Forster, PT, a physical therapist who trains and rehabs elite-level athletes at his Phase IV performance center in Santa Monica, Calif. (phase-iv.net)

Forster teaches his athletes to get their Usain Bolt on using a technique called overspeed training in which he puts them in a harness suspended over a treadmill. The harness removes

roughly 20 pounds of bodyweight, allowing the athlete to turn his legs over quickly and fluidly, as if he were running on a planet with less gravity. According to Forster, it's a very quick adaptation and takes only a handful of sessions to train the nervous system to break through speed plateaus.

But what if you don't have access to a gravity harness and sprint-worthy treadmill? "Downhill running is the low-tech way of doing overspeed training for neurological retraining," says Forster, who has trained 44 Olympic medalists and is the co-author of *Healthy Running Step by Step* (Fair Winds Press, 2014).

Yet running downhill isn't quite as simple as it sounds. For one thing, it's not for beginners. Forster describes the classic pyramid of periodized training originally created by Russian

CRUISE CONTROL

Try performing this downhill running program once a week for three weeks, then take one week off. After that, do two downhill running sessions per week for another three-week block.

- Run for one mile to warm up.
- Find a slight decline (2 to 4 percent grade) and run for 50 meters. Walk back to the starting point and repeat for a total of four to five intervals. These intervals should be at about a six on a Rate of Perceived Exertion scale (10 being all-out effort and three being a warm-up pace).
- Stretch after each session. Focus on the quadriceps, says Forster, which can help prevent the kneecap from getting sore.
- Don't overdo it. Downhill running is stressful and requires more recovery.

sports scientists: The first priority and largest level is joint stability (the structural integrity to train hard), followed by strength, then power. Speed is the final and smallest part of the pyramid. That means before you start speed training you should have a decent base of slow and flat running, at least three to four miles a couple of times a week. After that, you should spend four weeks running uphill (strength) plus at least a few weeks performing short and fast intervals or plyometrics (power). Someone engaged in a well-rounded conditioning program like CrossFit can utilize downhill training almost immediately.

Most people tend to lean backward when going downhill as a natural braking mechanism. For overspeed training, however, try to lean forward slightly so your upper body is perpendicular to the running surface. Forster recommends using a shorter stride and faster cadence, which prevents injuries of all types. Aim for 180 steps per minute (30 steps every 10 seconds) no matter the pace or the decline.

"This training will also transfer to the gym for a few different lifts," says Forster. "The whole reason we do this is for more leg speed, and in certain lifts those muscle fibers will be able to fire faster." ■

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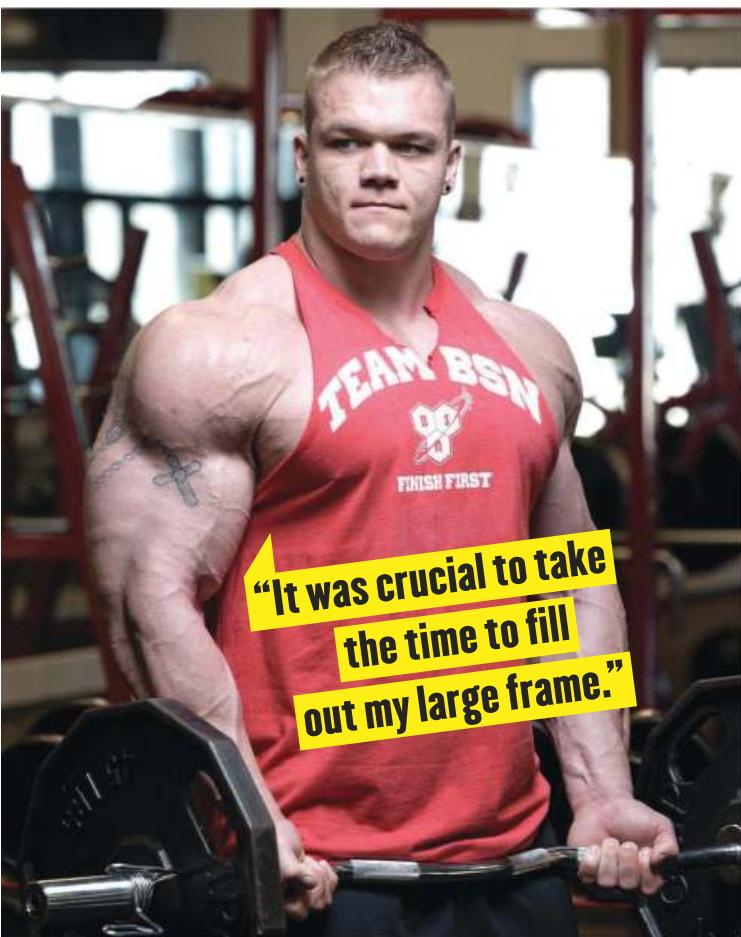


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[PRO CORNER]



DALLAS MCCARVER

A win in his pro debut barely whet Dallas McCarver's competitive appetite. What's next for this X-framed BSN athlete?

BY JERRY KINDELA, MA, DHS

At age 20, Tennessee's Dallas McCarver stepped on the dais for the first time and nailed a win: the junior overall and junior heavyweight class at the 2011 NPC Hub City Fitness Quest. In quick succession he bagged both open super heavyweight and overall honors at the 2011 Battle at the River. Of course, it's one thing to ring the bell in a few local events but another thing entirely to test oneself against national-caliber athletes. That's precisely what McCarver set out to do and, roughly a year later, he earned his pro card at the North American Championships. After two quiet rebuilding years, he sailed to a first-place win in his pro debut at age 24 and still has plenty of years ahead to keep moving up the ladder. *Muscle & Performance* checked in with the new pro less than a week after his victory.

What did it feel like to earn a title in your first professional outing?

It was a truly unbelievable feeling; I am very blessed to

have had such a successful pro debut. To be honest, it still hasn't all set in yet.

After such a quick rise through the amateur ranks, you took some time off before making your pro debut. How difficult was it to sit out?

It was really an easy choice for me and my trainer, Hany Rambod. I'm a bit on the tall side for a bodybuilder, so I felt it was crucial to take the time to fill out my large frame or else risk looking lanky onstage compared to the other athletes.

What did you concentrate on to add all that new muscle?

I focused on my weak areas such as my quads and overall thickness, especially when viewed from the side. Plus, I stayed vigilant about keeping my waist as small as possible. I used as heavy a weight as I could while still focusing strictly on the intended muscles. Hany helped me to slow everything down and zero in on the contractions of the muscles, feeling them fire properly. To keep my waist tight I made sure to avoid overeating, I always wore a belt while training and I focused on keeping my midsection tight at all times. ■

DOWNTOWN DALLAS

Here's the training that newly minted pro Dallas McCarver used to pack more mass onto his lower half heading into 2015.

Every bodybuilder favors training certain bodyparts — generally those that respond well to resistance work — over others. McCarver's selection process is somewhat unique: "My favorite muscle group to train is whatever I need to improve the most, and recently it has been quads." Here's a sample of a typical quad-training day.

| EXERCISE | SETS | REPS |
|---------------|------|---|
| Leg Extension | 5 | 15 ¹ |
| Hack Squat | 3 | 10 |
| Leg Press | 2 | 10/20/30/40/50, 50/40/30/20/10 ² |
| Walking Lunge | 3 | 30 |

1 Warm-up sets, not done to failure.

2 The first set is an ascending pyramid. Starting with three plates per side, Dallas adds one plate to each side and increases reps at each stage, with 90 seconds of rest between sets. After working up to seven plates per side for 50 reps, he rests one minute, then completes an additional set of 50 before reversing the order and working back down to 10 reps at three plates per side. He takes one minute of rest between sets on the way back down.

DALLAS MCCARVER

Birthdate: April 9, 1991

Birthplace:
Blue Goose, Tenn.

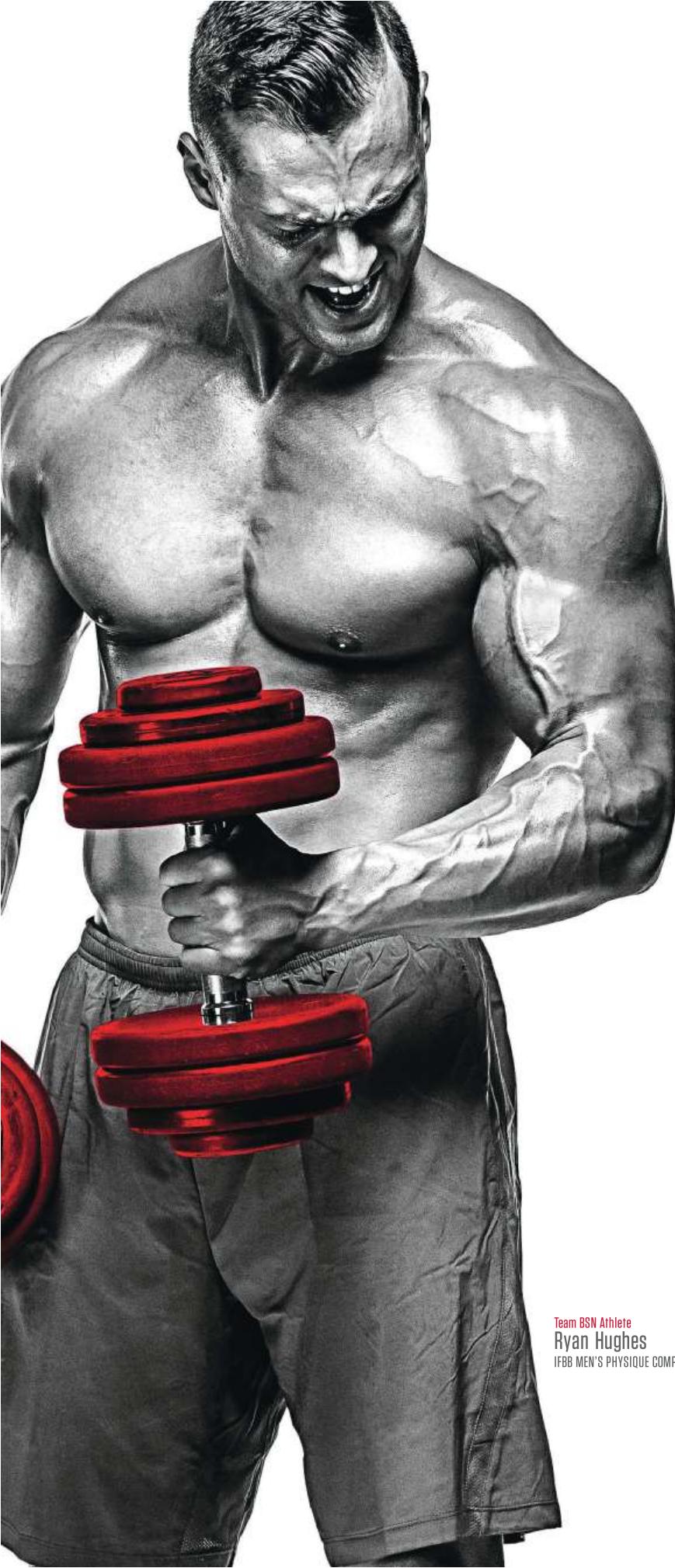
Current City:
Jackson, Tenn.
Height: 6'1"

Weight: 260 pounds
(contest); 300 pounds (off-season)

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GET TO KNOW: DYMATIZE

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BY JILL SCHILHOUSE

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COMPANY PASSION Delivering on its motto "Your Ambition. Our Nutrition," Dymatize strives to offer the best nutritional supplements to help athletes achieve their specific performance and fitness goals.

PRO-ATHLETE PROOF IMG Academy (Bradenton, Fla.) and Chip Smith Performance Systems (Norcross, Ga.), two of the most elite training facilities in the country, use Dyma-

tize products as part of their nutrition programs to fuel hundreds of pro and near-pro-level athletes striving to improve their performance and reach their goals. "Our supplements are formulated by top sports-nutrition scientists and tested by elite athletes at world-

class training facilities," says Marc Mollere, senior vice president of sales and marketing. "In addition, they are Informed Choice Certified, which provides assurance that they're free of banned substances. No amino spiking, contaminants or questionable ingredients. Period!"

LIVING THE BRAND Dymatize has a range of elite athletes who are passionate brand ambassadors. Just two examples include Physique competitor and fitness model David Morin and NPA Bikini champion Kelly Knox, who have been featured in multiple industry magazines and traveled the world to connect with fans.

SNEAK PEEK Over the next 18 months, Dymatize will introduce new, great-tasting Elite Protein bars that have 25 grams of protein, 6 to 7 grams of fiber, 4 grams of BCAAs and 2 grams of leucine. They're made with an Elite Protein blend that has both fast and sustained amino acid delivery to support muscle growth and prompt muscle protein synthesis when used in conjunction with resistance training.

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BY JOE WUEBBEN
PHOTOGRAPHY BY ROBERT REIFF
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you're looking for a fat-loss program that's fancy or cute, go somewhere else. Fancy and cute won't get you shredded, at least not according to science. Study after study shows that compound (multijoint) exercises are best for burning calories and high-intensity cardio is highly adept at torching body fat. This isn't groundbreaking research we're uncovering here, but it sure is effective.

Not only that, but it's the basis of the following fat-burning training protocol courtesy of David Hooper, MA, CSCS, doctoral fellow in the department of kinesiology and Human Performance Laboratory at the University of Connecticut (Storrs), one of the nation's leading academic institutions for exercise science research.

Hooper's program is goal-oriented (that goal being maximal fat loss), has built-in progressions to keep the results coming and, best of all, is customizable to individual preferences. Don't feel like running? Fine, hop on a bike. Hate benching with a barbell? Use dumbbells instead.

"This program is all about integrating scientifically based strategies into what people like to do," Hooper says. "A cookie-cutter program doesn't exist. People need to be incorporating

ROMANIAN DEADLIFT

Stand upright holding a barbell in front of your thighs, feet shoulder-width apart and a slight bend in your knees. Keeping your chest up and core tight, lean forward at the hips, pushing your glutes rearward and sliding the bar down your legs until your torso is roughly parallel to the floor. Keep your back flat throughout; don't let it round. Contract your hamstrings and glutes to reverse the motion and return to an upright position.

SUBSTITUTES One-leg Romanian deadlift (dumbbells or barbell), leg curl, good morning, glute-ham raise



DUMBBELL OVERHEAD PRESS

Sit on an upright bench or low-back seat and hold a pair of dumbbells at shoulder level, elbows and wrists stacked. Press the dumbbells straight up until your elbows are just shy of lockout, touching the weights together at the top, then slowly return to the start position.

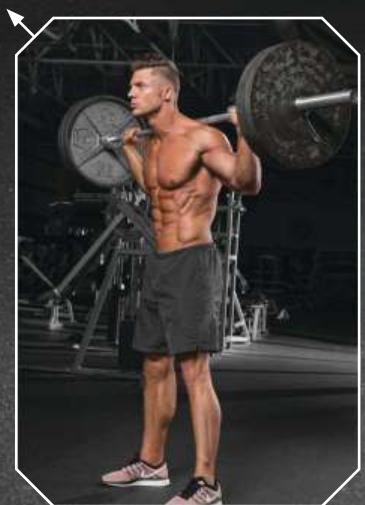
SUBSTITUTES Barbell overhead press, machine overhead press, kettlebell overhead press, handstand push-up



BARBELL SQUAT

Stand holding a barbell across your upper traps. Position your feet roughly shoulder-width apart and press your chest out slightly so your back arches naturally. Squat down as if sitting in a chair. When your thighs reach parallel to the floor, push yourself up through your heels, extending your knees and hips, to return to standing.

SUBSTITUTES Barbell front squat, Smith machine squat, goblet squat, one-leg squat





BARBELL STEP-UP

Stand facing a bench or plyometric box with a relatively light barbell resting across your upper traps. Step up onto the bench with one foot and forcefully press down into it to raise your body until your working leg is fully extended. Reverse the motion to return to the start. Alternate legs for reps.

SUBSTITUTES Dumbbell step-up, lunge, Bulgarian split squat



as much of the things they like to do as possible."

Follow Hooper's plan for anywhere from four to 12 weeks, depending on how much weight you're trying to lose. Pair it with a complementary fat-loss nutrition plan and you'll be considerably leaner in a matter of weeks.

Hooper's program consists of three weight-training workouts and three cardio sessions per week, preferably done on different days (see "Get-Lean Program Notes" below for specific training guidelines). As your conditioning level improves, a fourth day of cardio can be added, but initially three will suffice.

Every resistance workout you do will focus on the entire body (as opposed to splitting up muscle groups) and emphasize basic compound movements. When your primary goal is to get as lean as possible, achieving maximum "bang for your buck" in the gym is paramount. Multijoint move-

BARBELL ROW

Stand holding a barbell with an overhand grip and your feet shoulder-width apart. Bend over at the waist until your torso is close to parallel to the floor. Begin with the bar hanging straight down toward the floor, knees bent and back flat. Keeping your torso stationary, contract your back muscles and lead with your elbows to pull the bar toward your abs. When it touches, squeeze your shoulder blades together, then slowly return to the start position.

SUBSTITUTES Dumbbell row, one-arm dumbbell row, seated cable row, machine row, inverted row

GET-LEAN PROGRAM NOTES

These guidelines come from David Hooper, MA, CSCS, who designed the program. They'll help you map out your training and introduce variety, keeping you on your toes and your head in the game as you pursue your fat-loss goals.

>> IMPROVISE: For optimal results and to prevent boredom, don't simply repeat these exact workouts as written every week; treat this as a training template that can be tweaked to accommodate individual preferences. Stay in the recommended set and rep ranges, but substitute different exercises regularly as desired. For example, incline presses instead of flat-bench presses, front squats instead of back squats, sumo deadlifts for traditional deadlifts, bodyweight or assisted pull-ups for lat pulldowns, etc. Just make sure the alternate exercise is comparable to the one listed.

>> ADVANCE: To maximize fat burning,

you'll want to increase your training intensity and/or volume every week. See the various "Progress Points" in the workout charts (both lifting and cardio portions) for suggestions on how to challenge yourself throughout the program to reach your goals.

>> SPECIALIZE: Keep lifting workouts spaced at least 48 hours apart (for example, Monday, Wednesday and Friday). Ideally, cardio workouts should be done separately from weights, either on different days or in different sessions during the day. "Any time two workouts are done on the same day, the one you do first will compromise the other," Hooper says. "I

believe that doing lifting and cardio on separate days is the best-case scenario if you can make it work, followed by a morning/evening split with your personal priority done first."

>> ISOLATE (IF YOU MUST): Isolation exercises for the biceps, triceps, calves and abs are not included in the training plan because they'll provide very little fat-burning effect; compound exercises are your best bet, as they stimulate the largest amount of muscle. That said, feel free to train any or all of these smaller bodyparts at the end of your lifting sessions. "If you like those exercises, you should absolutely do them," Hooper says.

ments such as squats and lunges for the legs, presses for the chest and shoulders, and rows for the back will stimulate the most amount of muscle, which in turn will maximize calorie burn for greater fat loss.

Not all lifting sessions will be the same, however. The first workout of the week will be strength-oriented, utilizing the three major powerlifting exercises (squat, bench press and deadlift) with three to five reps per set plus assistance moves for the back and shoulders in the six to eight rep range.

A heavy day may seem ill-suited to a fat-burning program, but Hooper assures no one wants to get weaker on any regimen and he's probably right.

"It's often said that losing fat and gaining muscle at the same time are difficult, because the former requires caloric deficit and the latter caloric surplus, so they don't go together," he says. "But I think it's a good idea to keep one strength workout in there to try to offset strength loss as much as possible so you don't lose all those gains you worked so hard for."

The other two resistance-training sessions per week incorporate moderate weights and rep ranges (eight to 10 and 12 to 15). Going any lighter than this,



LAT PULLDOWN

Adjust the seat of the machine so that your knees fit snugly beneath the pads. Grasp the bar outside shoulder width with your arms fully extended overhead. Contract your lats and bend your elbows to pull the bar straight down until it touches your upper chest. Squeeze your shoulder blades together for a count, then reverse the motion to return to the start position.

SUBSTITUTES Machine pulldown, pull-up, assisted pull-up, reverse-grip pulldown

WEIGHT TRAINING

DAY 1 (MONDAY): FULL-BODY STRENGTH

WARM-UP Work for three to five minutes on cardio equipment followed by five minutes of full-body dynamic stretching.

| EXERCISE | SETS | REPS | REST |
|-------------------------|------|------|--------|
| Barbell Squat | 5* | 3-5 | 3 min. |
| Bench Press | 5* | 3-5 | 3 min. |
| Deadlift | 5* | 3-5 | 3 min. |
| Dumbbell Overhead Press | 3 | 6-8 | - |
| <i>-superset with-</i> | | | |
| Lat Pulldown | 3 | 6-8 | 2 min. |

*Perform at least one warm-up set of eight to 10 reps before your working sets.

PROGRESS POINTS You shouldn't expect to get significantly stronger when following a fat-loss training plan, but increase weights when possible.

DAY 3 (WEDNESDAY): FULL-BODY MUSCULAR ENDURANCE

WARM-UP Work for three to five minutes on cardio equipment followed by five minutes of full-body dynamic stretching.

| EXERCISE | SETS | REPS | REST |
|-------------------------|------|-------|--------|
| Barbell Squat | 3 | 8-10 | 2 min. |
| Dumbbell Bench Press | 3 | 8-10 | 2 min. |
| Romanian Deadlift | 3 | 8-10 | 2 min. |
| Barbell Row | 3 | 12-15 | 2 min. |
| <i>-superset with-</i> | | | |
| Dumbbell Overhead Press | 3 | 12-15 | 2 min. |
| Dumbbell Lunge | 3 | 12-15 | 2 min. |

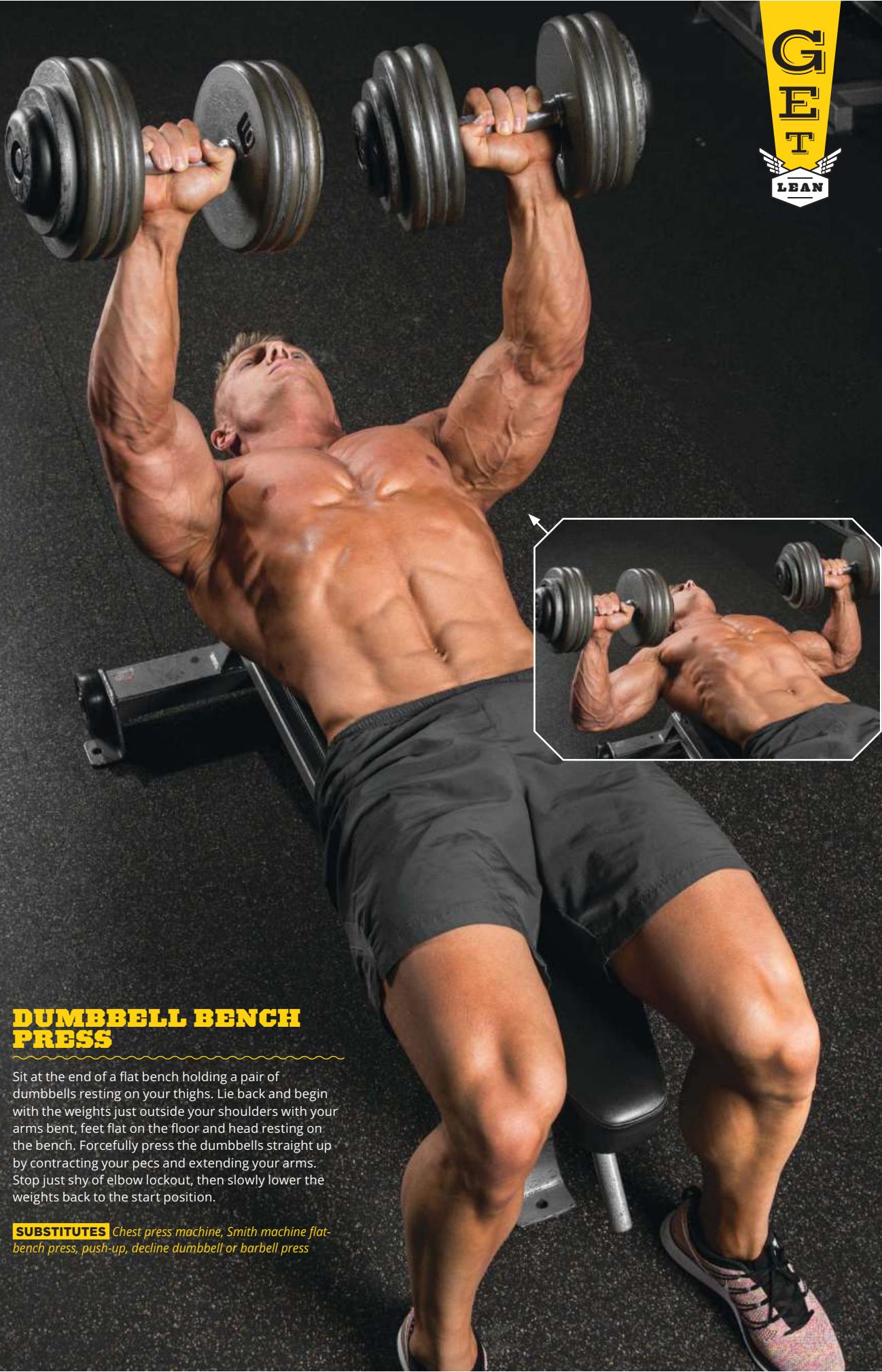
PROGRESS POINTS Decrease rest periods every one to two weeks, from two minutes to 90 seconds to one minute, even down to 30 seconds. Set counts can also increase from three to five. "A combination of five sets with 30 seconds rest would be very advanced," Hooper says.

DAY 5 (FRIDAY): FULL-BODY MUSCULAR ENDURANCE

WARM-UP Work for three to five minutes on cardio equipment followed by five minutes of full-body dynamic stretching.

| EXERCISE | SETS | REPS | REST |
|----------------------------|------|-------|--------|
| Deadlift | 3 | 8-10 | 2 min. |
| Incline Dumbbell Press | 3 | 8-10 | 2 min. |
| Barbell Step-Up | 3 | 12-15 | 2 min. |
| Seated Cable Row | 3 | 12-15 | - |
| <i>-superset with-</i> | | | |
| Dumbbell Lateral Raise | 3 | 12-15 | 2 min. |
| One-Leg Squat (bodyweight) | 3 | 12-15 | 2 min. |

PROGRESS POINTS Just as on Day 3, rest periods can be decreased on a weekly or biweekly basis. Weight can also be increased gradually on any exercise as you see gains in muscular endurance.



DUMBBELL BENCH PRESS

Sit at the end of a flat bench holding a pair of dumbbells resting on your thighs. Lie back and begin with the weights just outside your shoulders with your arms bent, feet flat on the floor and head resting on the bench. Forcefully press the dumbbells straight up by contracting your pecs and extending your arms. Stop just shy of elbow lockout, then slowly lower the weights back to the start position.

SUBSTITUTES Chest press machine, Smith machine flat-bench press, push-up, decline dumbbell or barbell press

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Hooper maintains, provides no further benefit to fat burning. "I wouldn't go above 12 to 15 reps," he says. "After that, exercise becomes inefficient in that you spend too much time just getting to fatigue. The notion that higher reps 'tone' the muscles is nonsense. Toning is a loss of fat, pure and simple."

As for cardio, you'll have one long-distance day and two interval workouts every week on Hooper's program. The interval days might look similar on paper, but they'll each provide a slightly different stimulus to keep the body guessing and maximize calorie burn. One session involves moderate-paced running at a 1:1 work-to-rest ratio (one minute of exertion followed by one minute of active recovery) and the other will consist of sprints with longer rest periods (1:3 ratio).

"Cardio doesn't have to be dull," says Hooper. "A 60-minute 'fat-burn walk' is boring and not very effective. Interval training burns a lot of calories in a shorter period. Not only is this more time-efficient, but it will have a greater effect on fitness levels. And a higher fitness level means you're able to do more demanding cardio workouts."

"Of course, everything in life has drawbacks," he adds. "It's not easy to train this way! You have to find some way to learn to like how interval training feels or at least learn to tolerate it."

The key to getting results on any plan (this one included) is to continually raise the bar by increasing both volume and intensity, preferably on a weekly basis. Hooper's plan is intended to get more and more challenging over time, with "Progress Points" included throughout that recommend where to increase sets and shorten rest periods in lifting workouts and when to add distance and intervals to cardio sessions.

By the time you're finished with this Get-Lean program, doing more work at a higher intensity should directly translate to your desired goal: to burn pounds of body fat. How's that for "fancy" and "cute"? ■



RUNNING

If the weather allows, you'll want to do at least some of your cardio workouts — long distance and sprints — outdoors. Of course, the fresh air is nice, but getting off the treadmill and onto solid ground is also good for maximizing the benefits of the activity, engaging the muscles in a different way than the controlled environment of a stationary machine.

SUBSTITUTES *Elliptical, stationary bike, stair-stepper, rower, outdoor track or roadway*

CARDIO TRAINING

CARDIO WORKOUT 1: LONG DISTANCE

TREADMILL Four-mile run

PROGRESS POINTS Work up to a 10K (6.2 miles). Record your time on all runs, and try to improve on each in the subsequent weeks.

CARDIO CUE "Personally, I enjoy running, but I know it's not for everybody," Hooper says. "Mixing in the stationary bike or elliptical is just fine. Remember, it's about getting the heart rate up. No machine is really 'better' than another. You can argue that the bike burns fewer calories because the upper body is still, but cyclists look pretty good, don't they?"

CARDIO WORKOUT 2: CONDITIONING (MODERATE SPEED RUNNING)

TREADMILL INTERVALS 10 rounds of alternating between one minute of moderate-paced running (around 8 mph) and one minute of brisk walking (4 mph).

PROGRESS POINTS Try to increase your running interval speeds a little bit every week (say, from 8.0 to 8.5) and/or bump up the number of rounds over time to 15, then 20.

CARDIO CUE "I like to do intervals on a treadmill so that I have clear control over pace and time," Hooper says. "Trust me, a 1:1 ratio is a challenge even for a marathon runner if the pace is high enough."

CARDIO WORKOUT 3: CONDITIONING (SPRINTS)

TREADMILL INTERVALS 10 rounds of alternating between 30 seconds of sprinting/fast running (10 to 12 mph) and 90 seconds of brisk walking (4 mph).

PROGRESS POINTS Increase the number of rounds to 15, then 20.

CARDIO CUE Hooper says: "Most treadmills don't go over 12 miles per hour, so if 30 seconds isn't enough, you'll have to extend it to 60 seconds with three minutes of walking to maintain the 1:3 work-to-rest ratio. Or you can do the intervals on a running track."

CARDIO WORKOUT 4: ADVANCED CONDITIONING

TREADMILL INTERVALS 10 rounds of alternating between one minute of moderate-paced running (around 8 mph) and one minute of jogging (6 mph).

PROGRESS POINTS Don't add this fourth weekly session until you've established a good cardio base via the other three workouts. Advanced athletes can progress to 15 to 20 rounds.

CARDIO CUE According to Hooper, adding this last cardio workout to the mix is "very demanding" and should be reserved for later weeks after you've built up a solid conditioning base.

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DEEP 6



WHILE YOU SLEEP, YOUR BODY IS UNDER CONSTRUCTION. HERE'S THE LOWDOWN ON THE SIX BEST SUPPLEMENTS FOR MAXIMIZING NIGHTTIME GROWTH AND FAT BURNING.

BY DWAYNE JACKSON, PHD | PHOTOGRAPHY BY ROBERT REIFF

When you hit your stride in a really epic workout, you have the immediate gratification of seeing your body change before your eyes. Muscles swell, veins traverse your arms and sweat gives you that show-stopping gleam that makes each pass by the mirror all the more rewarding. Fast-forward a few hours and you've gone from the Hulk back to Bruce Banner. That's because the real growth event happens much later: not as you train, but as you sleep. Solid sleep — as well as what you do just before lights-out — is typically the most underrated factor in changing your overall body composition.

Slow-wave (deep) sleep is essential for balancing levels of hormones in the body that are necessary for muscular recovery and growth. And the largest contribution of deep sleep to recovery is the release of growth hormone (GH) from the anterior pituitary, which sets up the perfect environment for muscular growth. Proper bedtime nutrition is also key to ensuring a steady supply of muscle-building amino acids while you slumber. These six supplements can promote deep sleep, GH release and muscular development while you dream of being the world's next superhero.



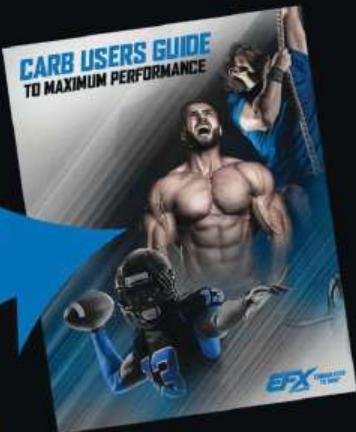
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DEEP SLEEP & GH RELEASE

HELP YOUR BRAIN CRANK UP ITS MUSCLE-BUILDING MACHINERY WITH THESE SLEEP AIDS.

1 MELATONIN

This naturally occurring compound in the body is synthesized by the pineal gland in the brain. It plays a vital role in maintaining the sleep cycle and has been used for years as a supplement to treat jet lag and facilitate deep sleep. Notably, scientists from Baylor University (Waco, Texas) reported in the *Journal of the International Society of Sports Nutrition* that healthy young males who took a 5-milligram melatonin supplement had double the GH secretion under resting conditions compared to when they took a placebo. Based on melatonin's sleep-inducing and GH-releasing properties, we think it makes a great bedtime supplement for athletes and those looking to build muscle, especially if they find it difficult to sleep deeply.

>> TAKE 5 MILLIGRAMS ABOUT 30 MINUTES BEFORE BED.

2 VALERIAN ROOT

This root comes from a perennial flowering plant called *Valeriana officinalis*. The name "valerian" is thought to derive from the Latin word "valere," meaning "to be well." Its medicinal uses as an analgesic (pain reliever) and sedative are centuries old and well documented, and the root is still used today as an alternative to drug therapy. Overall, the research indicates that valerian root supplements can safely reduce anxiety and promote sleep, exhibiting its effects through critical pathways in the brain. Its sedative properties are robust enough that it's often used as a natural remedy for insomnia and anxiety. For athletes, this supplement can be used to promote sleep and for mild pain relief.

>> ALTHOUGH THERE IS NO ESTABLISHED IDEAL DOSE, 500 TO 1,000 MILLIGRAMS OF VALERIAN ROOT EXTRACT TAKEN BEFORE BED HAS BEEN FOUND TO BE EFFECTIVE.

3 GAMMA AMINOBUTYRIC ACID (GABA)

GABA is an amino-acid neurotransmitter that has a number of important roles in the central nervous system. When ingested, it has been scientifically noted to boost GH release, especially during sleep. There are also several reports of enhanced fat loss when using GABA, likely due to elevated GH release. Many individuals who have supplemented with GABA report experiencing deep and satisfying sleep. Doses used in scientific studies range from a minimum of 2 grams up to 18 grams taken about two hours before bedtime.

>> TAKE 5 GRAMS OF GABA ABOUT TWO HOURS BEFORE BED TO ELEVATE GH RELEASE.

4 MUCUNA PRURIENS

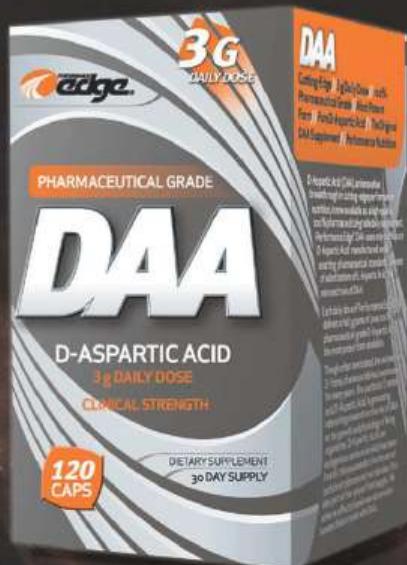
Mucuna pruriens comes from an ancient Indian herb called velvet bean, which has been shown to elevate the body's stores of L-dopa (the precursor to dopamine) when taken orally. Dopamine is a key player in the signaling for GH release by inhibiting hypothalamic somatostatin levels, which leads to greater GH secretion by the pituitary gland.

>> TAKING APPROXIMATELY 2,000 MILLIGRAMS OF HIGH-QUALITY MUCUNA PRURIENS (STANDARDIZED TO 15 PERCENT L-DOPA) IMMEDIATELY BEFORE BED CAN SUPPORT A SUBSTANTIAL BOOST TO YOUR NOCTURNAL GH SURGE.



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RAW-MATERIAL NUTRITION

THESE SUPPS PROVIDE YOUR BODY WITH THE PROPER
OVERNIGHT BUILDING MATERIALS.

5 CASEIN PROTEIN

High-quality micellar casein protein is the No. 1 pre-bedtime protein source. Micelles are large particles that remain in suspension and act as a liquid in certain environments, yet stick to one another and form large protein globs in other environments. These properties enable micellar casein to mix easily in water or milk yet form a sustained-release "protein gel" in the stomach, making it a very efficient long-term supplier of nutrients and amino acids. When taken before bed, micellar casein supplements impart slow and long-lasting elevations in blood amino acid levels (for up to seven hours), providing long-term nutrition to recovering muscle while you sleep. In addition, this unique sustained amino acid release has been reported to cause a marked decrease (approximately 34 percent) in muscle catabolism.

>> TAKE 40 TO 50 GRAMS OF HIGH-QUALITY MICELLAR CASEIN PROTEIN AT BEDTIME.

6 ESSENTIAL FATTY ACIDS (EFAS)

The omega-3 and omega-6 EFAs exhibit numerous beneficial health effects including fat loss and muscle growth as well as cardiovascular, joint and neural health. Omega-3s are found in fatty fish and flax while omega-6s are found in higher percentages in vegetable oils and oils from nuts. Since the typical North American diet has an abundance of omega-6s and is lower in omega-3 fatty acids, we tend to get more than enough omega-6s but inadequate amounts of omega-3s from our daily diet. That's why we recommend taking fish-oil supplements to boost your omega-3 levels. In terms of pre-bedtime nutrition, fish oil synergizes with micellar casein protein to further slow the release of amino acids, ensuring sustained release throughout the night while you sleep. ■

>> TAKE 2 TO 4 GRAMS OF FISH OIL WITH YOUR BEFORE-BED CASEIN SHAKE.



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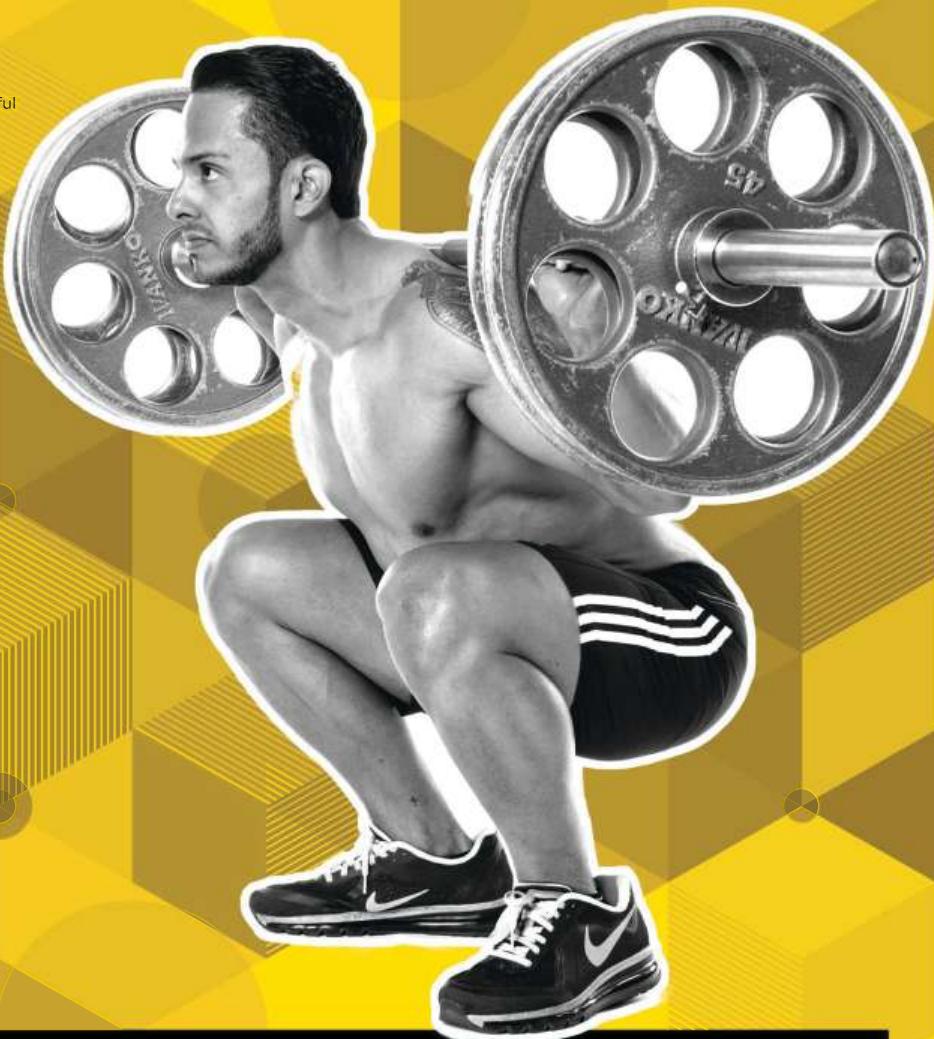


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A slow descent is a great way to build a more forceful positive contraction.



IS YOUR STRENGTH STUCK IN A RUT?
START PILING ON THE PLATES AGAIN WITH THESE
FOUR SCIENCE-BASED STRATEGIES.

BY TODD BUMGARDNER, MS, CSCS*D | PHOTOGRAPHY BY ROBERT REIFF

STRENGTH IS NOT OVERRATED. As ever, it remains the simplest means of building a bigger, better body. Unfortunately, most lifters lazily default to simply adding a few pounds to the bar each week. This is effective, to be sure, and should be part of any serious strength-seeker's approach, but a more efficient methodology involves the judicious deployment of key training tools.

The act of getting stronger is the most basic and arguably the easiest achieved of all fitness pursuits. Your brain,

working in concert with your body, answers the call fairly quickly and with zeal. This is particularly true for beginners, but anyone willing to put in the sweat equity can make appreciable gains in strength with a few small adjustments and bullish consistency.

In the pages that follow, you'll find four proven training strategies that build superior strength in no time flat, paving the way for new size and a fully made-over metabolism. What you do with your newfound strength is up to you.



BULGARIAN SPLIT SQUAT. Following heavy eccentric squats with lighter compound work means bigger, stronger legs in the long run.



TEMPO DECODER

The speed of each rep is more important than you may realize, regardless of your training goal. Not familiar with rep tempo notation? Here's a crash course: The first number is the time in seconds spent in the eccentric phase, the middle number represents the time spent in the bottom position and the third number is the time spent in the positive or concentric phase. An X means you should perform the "up" phase as fast as possible. Heavy eccentric training is planned in two- to four-week blocks to avoid burnout.

ECCENTRICS

Each lift has three phases: eccentric (negative), isometric and concentric (positive). Forward-thinking lifters learn to use all three to their advantage while tangling with the weights. But one phase in particular can help unlock new and drastic gains in strength: the eccentric contraction.

Emphasizing the eccentric, or lowering, phase of a lift produces impressive power. Your body is like a race car, built to perform but only within its designed limits. This domineering protective mechanism is a sensory nerve found where muscle turns to tendon, called the Golgi tendon organ (GTO). Its job is to monitor muscle force and communicate that data to the brain. If muscular force reaches perceived dangerous levels, the brain decreases force to that muscle, preventing tearing. Sounds like a valuable safeguard, right? The problem is that the GTO stops force 40 percent below a muscle's full capacity, so the power tank is left more than half-full of unused force. The race is blown before it even begins. Happily, there's a workaround.

Eccentric training reduces the GTO's propensity to pump the brakes. If a muscle can decelerate more weight — the eccentric phase's job — it can generate more power during

the concentric contraction. So eccentric training teaches the GTO (and the brain) that muscles have improved stopping power and greater forces won't damage them. In turn, protective mechanisms relax. In addition, research shows that lifters can handle as much as 160 percent of their one-rep max (1RM) on the eccentric portion of a lift, and researchers at East Carolina University (Greenville, N.C.) found that subjects increased strength by 46 percent after just a single week of eccentric-focused training.

Eccentrics work best with bench press and squat variations because they have pronounced lowering phases. Loads are heavy since the sweet spot for strength is about 85 percent of 1RM.

LEG-CENTRIC STRENGTH

Use the following program once weekly for two to four weeks to boost your lower-body strength stats.

| EXERCISE | SETS | REPS | TEMPO | REST |
|--------------------------------|------|------|-------|--------|
| Eccentric Squat | 5 | 3 | 5/0/X | 3 min. |
| Barbell Front Squat | 4 | 5 | 1/0/X | 2 min. |
| Dumbbell Bulgarian Split Squat | 3 | 6 | 1/0/X | 2 min. |

02

NEURAL CHARGE TRAINING

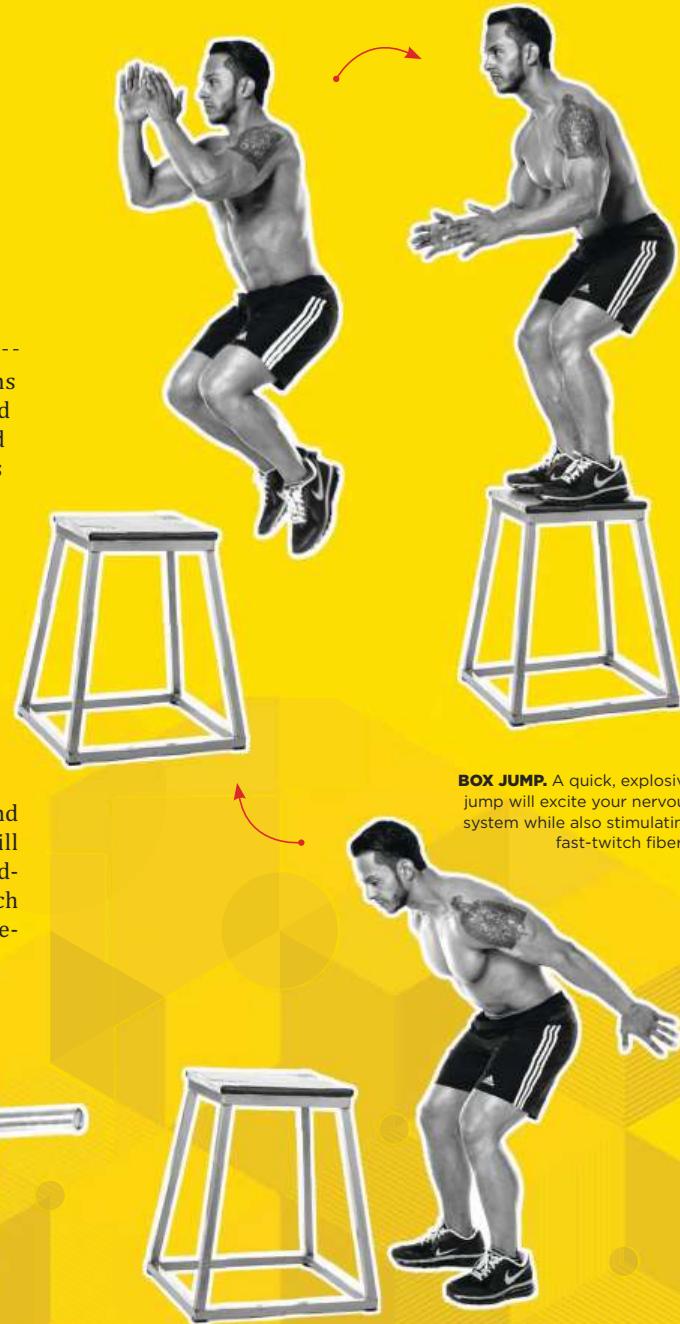
We romanticize hardcore, high-volume training sessions that transform us into gelatin-legged zombies, but should you leave the gym every day trained into a sweat-soaked oblivion? No! Heavy strength training taxes the nervous *and* musculoskeletal systems. Between ferocious training bouts, you need short, regenerative recovery workouts. Enter the neural charge: power routines that stimulate and salvage the nervous system.

These simple, short workouts include low-rep, full-rest circuits of core exercises, jumping variations, light Olympic lifts and upper-body plyometrics. The submaximal, explosive movements stimulate the nervous system enough to trigger recovery without the taxing effects of heavier strength and power training.

Done right, neural charge sessions last between 15 and 30 minutes, which keeps fatigue to a minimum while still training the body to produce maximum force when needed. At no point during the routine should you approach failure. The goal is to leave the gym feeling fresh and prepared to conquer your next strength-based workout.



HANG HIGH PULL. Even with submax loads, this move adequately taxes most major muscle groups.



RECHARGED STRENGTH

Keep your nervous system happy with this low-volume session designed to bridge the gap to your next big-weight workout. Perform it on one or two off-days per week, one at midweek and another after the week's final session.

| EXERCISE | SETS | REPS | TEMPO |
|--------------------------|------|--------|---------------------|
| RKC Plank | 5 | 5 sec. | -- |
| Box Jump | 5 | 3 | As fast as possible |
| Medicine-Ball Chest Pass | 5 | 3 | As fast as possible |
| Hang High Pull | 5 | 3 | As fast as possible |
| Broad Jump | 5 | 1 | As fast as possible |

Submaximal loads and low reps will require less rest, but take as long as necessary between sets and exercises to recover.

CLINICALLY TESTED MUSCLE BUILDING BEEF PROTEIN

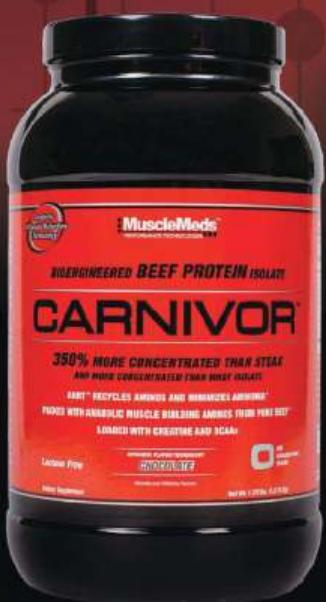
2 SCOOPS, 8 WEEKS 8 LBS. MUSCLE MASS⁺

The muscle building power of beef cannot be disputed. Ask most any bodybuilder and they will tell you that they make their biggest muscle gains and feel their strongest when they eat beef. Thanks to the development of CARNIVOR's advanced bioengineered Beef Protein Isolate (BPI), MuscleMeds has formulated a highly anabolic muscle building protein supplement that's shown in clinical research to build muscle mass and increase strength!

A new clinical study demonstrated that hard training athletes supplementing with CARNIVOR Beef Protein Isolate gained an average of 7.7 lbs. of muscle mass in just 8 weeks, while increasing strength. Researchers gave test subjects 2 scoops of CARNIVOR BPI daily for 8 weeks while they exercised 5 days weekly. Athletes taking CARNIVOR BPI added an impressive 6.4% average increase in lean body mass. In contrast, the placebo group did not significantly improve their muscle mass from baseline.*

The study also showed that CARNIVOR BPI supplementation significantly increased lifting strength. Test subjects increased their average bench press strength by over 45 lbs. and added more than 90 lbs. to their deadlift over baseline.* These impressive clinical findings clearly validate the muscle and strength building power of CARNIVOR Beef Protein Isolate.

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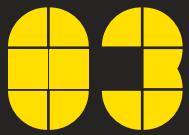


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*Sharp, et al., 2015 ISSN International Conference [Poster]. Muscle mass data based on male subjects. Lean body mass gains compared to baseline. Based on 2 scoops (46 grams protein) daily. Female subjects also experienced an increase in lean body mass.





HIGHER FREQUENCY

High-frequency strength (HFS) training is an unconventional solution that calls for loads of 50 to 70 percent 1RM on barbell lifts and follows the credo that (lots of) good practice makes perfect. Phenomenal deadlifting, for example, isn't happenstance; deadlifting skill grows by deadlifting.

Casting the deadlift as our hypothetical HFS exercise, it's programmed between the warm-up and the day's primary compound lift in the one to five rep range. These aren't, however, a few light sets that extend the warm-up. Each rep is focused violence: full-body tension and maximum bar speed.

Violent execution and frequent performance teaches the body better lifting execution and trains it to call on more muscle fibers during each rep. Since the loads are light, HFS is a training volume addition that's easily accommodated. Strength is gained without overtraining, which is key to sustained progress.

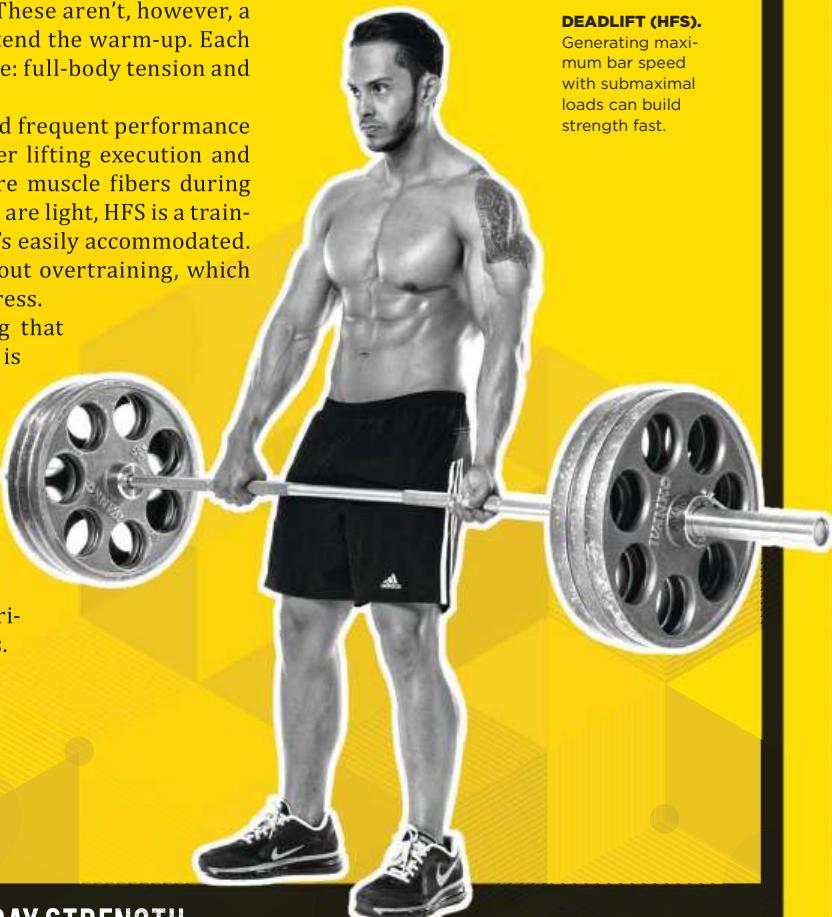
It goes without saying that picture-perfect form is crucial to extracting the most out of every exercise while minimizing the risk of injury. Since HFS exercises are executed every day, form must be dialed in — burned into your muscle memory — to avoid injurious muscle and joint stress.

ANY EXERCISE CAN BENEFIT FROM AN HFS APPROACH. SIMPLY START ANY WORKOUT WITH THE MOVEMENT YOU'RE TRYING TO GAIN STRENGTH ON USING THE PARAMETERS PROVIDED HERE.

DEADLIFT (HFS).
Generating maximum bar speed with submaximal loads can build strength fast.



GOBLET SQUAT. The positioning of this move shifts the emphasis away from your glutes and onto your quads.



EVERYDAY STRENGTH

Want to deadlift like a boss? Add HFS deads to the front end of every workout throughout the week, no matter what's being trained, to jack up your poundages on this full-body pull. Here HFS deadlifts lead off leg day, but you can use HFS ahead of any bodypart session or metcon or even before cardio workouts.

| EXERCISE | SETS | REPS | TEMPO | REST |
|---------------------|------|---------|---------------------|---------|
| Deadlift (HFS) | 3 | 5 @ 50% | As fast as possible | 90 sec. |
| Barbell Front Squat | 5 | 3 | 1/1/1 | -- |
| -superset with- | | | | |
| Barbell Rollout | 5 | 8 | 1/1/1 | 3 min. |
| Goblet Squat | 3 | 8 | 1/1/1 | -- |
| -superset with- | | | | |
| Hanging Leg Raise | 3 | 8 | 1/1/1 | 2 min. |

For supersets, rest only as long as necessary to get in position for the next exercise. Rest two to three minutes after each superset.

White Flood™ Reborn™ has finally been replaced by a superior preworkout supplement in our new White Rapids™! White Rapids™ is a completely new formula that addresses the needs of today's gym goer; Energy, Pumps and Stamina. Not only is your body treated to these beneficial ingredients, but so is your mind. Distractions are a thing of the past with the addition of mental focus based components. Life is rapid; get a preworkout that can keep up!



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ISOMETRICS FOR BETTER STARTING STRENGTH

This just in from Captain Obvious: The squat and bench press build strength and muscle. The problem, Captain, is that the bottom portion of each lift can mimic a deep, slippery-walled, difficult-to-escape well: a place where gains go to die. This struggle is often defined by bad positioning and a lack of explosion. Bottom-position isometrics rectify each.

The approach is simple: Quickly descend into the bottom of a squat or bench press, hold the position tight for three to five seconds, then explode up. These brief forays into the depths of each exercise engrain proper positioning. Such calculated pauses also limit the stretch-shorten cycle, which dictates that the harder a muscle is stretched, the harder it can contract. You're also forced to overcome gravity without the benefit of your muscles' stored elasticity, which usually helps you eke out a few extra reps or push a few extra pounds. ■

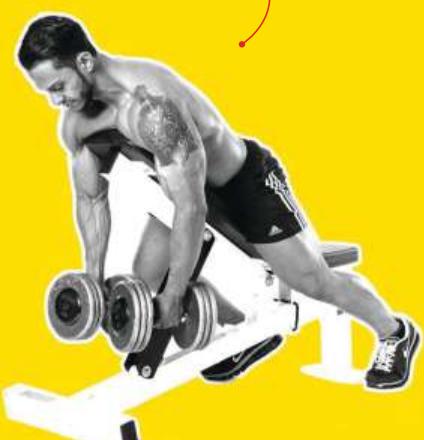
ISOMETRIC BENCH PRESS.

A long pause followed by a max effort trains your muscles to produce force without the benefit of elasticity.



ISOMETRIC CHEST-SUPPORTED ROW.

You can make all your pushes and pulls stronger with some calculated holds.



OUT OF THE HOLE

Use bottom-position isometric training to build explosive power out of the hole on vertical-plane lifts such as the bench press and row. Like eccentric training, loads here are heavy: about 85 percent of 1RM. Use this high-demand approach for two to four weeks before backing off to avoid overtraining.

| EXERCISE | SETS | REPS | TEMPO | REST |
|--------------------------------|------|------|---------------------|----------|
| Isometric Bench Press | 5 | 3 | 0/4/X | -- |
| -superset with- | | | | |
| Isometric Chest-Supported Row | 5 | 5 | 0/4/X | 3 min. |
| Isometric Dumbbell Bench Press | 3 | 5 | 0/3/X | -- |
| -superset with- | | | | |
| Bent-Over Lateral Raise | 3 | 10 | 1/1/1 | 2 min. |
| Broad Jump | 5 | 1 | As fast as possible | 2-3 min. |

For supersets, rest only as long as necessary to get in position for the next exercise. Rest two to three minutes after each superset.

PUT THE WHEY IN 'WEIGHTS' AND GAIN NATURALLY

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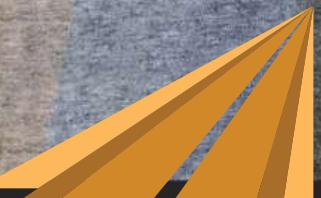
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ALL-AROUND LEAN

Need that extra boost to lose those last few pounds as swimsuit season comes to an end? RSP Nutrition has the answer.

RSP NUTRITION would like to introduce the solution to your fat-loss needs. QuadraLean is a 100 percent stimulant-free weight-loss formula scientifically designed to target and control the four key factors of weight loss: appetite, fat storage, energy and metabolism. To that end, QuadraLean contains effective dosages of four primary — and scientifically proven — ingredients that control these four factors.

CONJUGATED LINOLEIC ACID (CLA)

Conjugated linoleic acid is a healthy fat found naturally in meat and dairy products that has been shown to reduce body fat and increase lean muscle mass. CLA has also been shown to stimulate the breakdown of stored body fat and increase the disintegration of fat cells, thereby actually decreasing the number of fat cells in the body. Among its many benefits, CLA helps stop the negative effects of catabolism, increases protein accumulation and supports lean muscle development.

RASPBERRY KETONES

Raspberry ketones are a natural compound that gives red raspberries their sweet aroma. They have been shown to decrease the absorption of dietary fat and stimulate an increase in thermogenesis in brown adipose tissue. The benefits of raspberry ketones include decreased absorption of fat, increased metabolism, reduction of fatty tissue and natural fat-loss support.

GARCINIA CAMBOGIA

Garcinia cambogia is a plant that contains hydroxycitric acid (HCA), which aids weight loss by blocking fat and suppressing appetite. It accomplishes the former by inhibiting citrate lyase, a key enzyme that the body needs to convert carbohydrates into fat. HCA suppresses appetite by increasing levels of serotonin, a naturally occurring neurotransmitter that regulates mood, appetite and sleep, all critical factors to promoting a healthy body and lifestyle.

L-CARNITINE

QuadraLean's carnitine blend is designed to aid the conversion of fat into energy. Carnitine is required for the transport of fatty acids from the cytosol into the mitochondria during the breakdown of lipids (fats) for the generation of metabolic energy. This ingredient helps convert fat into energy, combats muscle fatigue and increases muscle mass. As a bonus, carnitine is an antioxidant that fights the free radicals that can damage cells in the body.

Adding a stimulant-free weight-loss supplement like QuadraLean to your daily stack will allow you to shed those last few pounds without the jittery feeling of most fat burners. ■

RSP



QUADRALEAN: THE SCIENCE

CLA (Conjugated Linoleic Acid)(Clarinol®)

- Helps reduce the number of fat cells in the body*
- Supports the breakdown of body fat*

Raspberry Ketones

- Supports thermogenesis in brown adipose tissue*
- Decreases the absorption of fat*

L-Carnitine

- Helps convert fat into usable energy for the body*
- Supports increased metabolism*

Garcinia Cambogia

- Limits enzyme production that turns carbohydrates to fat*
- Supports appetite control & mood enhancement*

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*These statements have not been evaluated by the food and drug administration. This product is not intended to diagnose, cure, or prevent any disease.

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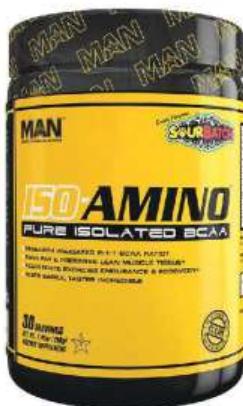
THE LIST

Your fall supplement shopping list has arrived. Use these products to build muscle, burn fat or just bridge the gap to your next meal.



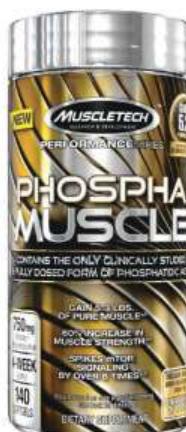
< BARNDAD'S FIBERDX

BarnDad's FiberDX is a 100-percent-natural fiber matrix that provides up to 56 percent of your daily fiber requirements with up to 14 grams of fiber and 13 grams of protein. Choose from such tasty flavors as German Chocolate, Cinnamon Bun and Strawberry Cream.



< MAN SPORTS ISO-AMINO

The first candy-flavored amino has arrived. Iso-Amino packs 5 grams of pure isolated BCAs in a clinically proven 2:1:1 ratio. No added artificial colors or dyes, just a simple, delicious-tasting BCAA for sustained energy and faster muscle recovery. Iso-Amino can be taken throughout the day or intra-workout.



BODYTECH TECH X PRE-EFFECT >

This preworkout formula has everything you need to build muscle, including caffeine, leucine and beta-alanine, all at a great price. Naturally and artificially flavored, Pre-Effect is dairy-free, gluten-free and soy-free.



< RSP NUTRITION QUADRALEAN

QuadraLean is a 100 percent stimulant-free weight-loss solution formulated to target and control four key factors: appetite, fat storage, energy and metabolism. QuadraLean contains effective dosages of CLA, carnitine, raspberry ketones and *Garcinia cambogia*.



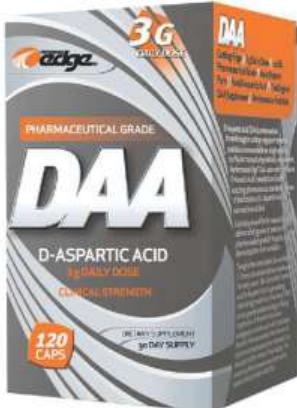
< MUSCLE ELEMENTS PRECRE

PreCre is a preworkout formula containing more than 20 grams of active ingredients. It provides the body with everything it needs to perform at its highest level so you can experience intense energy and focus, huge muscle pumps and increased strength.



PRIME NUTRITION MAX-HP >

The purest pre-workout available, Max-HP is made without any artificial colors, flavors or dyes. By increasing blood flow to enhance anabolic activity, Max-HP is designed to meet the heightened metabolic needs of high-performance athletes.



< PERFORMANCE EDGE DAA

A pure, safe and natural D-aspartic acid, Performance Edge DAA is formulated to help optimize natural testosterone levels. It delivers the most potent form available of 100 percent pharmaceutical-grade D-aspartic acid.



MHP CRE5 >

MHP's CRE5 is a next-generation supercreatine supplement that provides an advanced blend of creatine monohydrate, creatine HCl, creatine MagnaPower, creatine AKG and creatine AAB for maximum muscle volumizing and saturation. CRE5's enhanced absorption allows you to build muscle and strength rapidly and recover faster. It's so powerful, there's no loading necessary.



< LENNY & LARRY'S SNICKERDOODLE

The Snickerdoodle Complete Cookie is the newest addition to Lenny & Larry's delicious, baked nutrition product lineup. This great-tasting vegan and non-GMO treat has 16 grams of protein and 6 grams of fiber, making the Complete Cookie a perfect snack. Available in eight flavors. ■



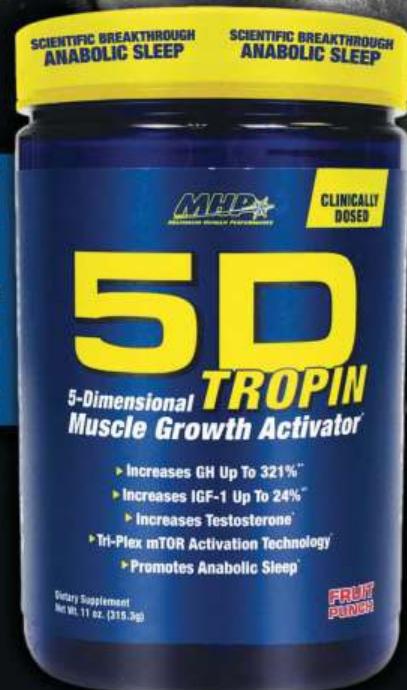
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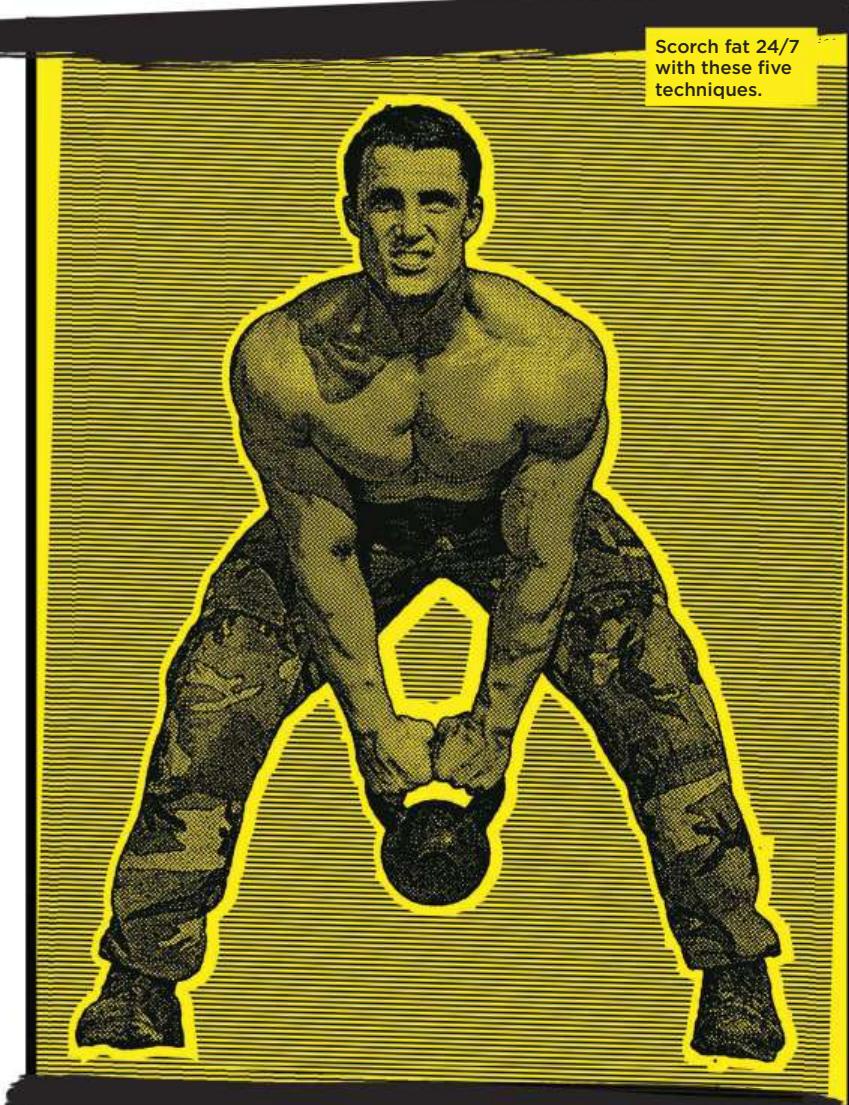


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Scorch fat 24/7
with these five
techniques.

5 WAYS TO BURN FAT WHILE RESTING

You've worked hard to melt the flab off your well-earned muscle. Here's how to keep the fat-burning fires lit long after you trade the weight bench for the sofa.

BY KARLA DIAL

It's October, and you know what that means: The days are shorter, the nights are longer and your schedule is full, plus all those holiday parties and family get-togethers are right around the corner. But you're not about to give in and put on a winter coat of blubber! The key at this time of year is to make the most of the time you have in the gym and ensure your tactics there lend themselves to excess post-exercise oxygen consumption (EPOC), stoking your body's fat-fighting furnace for up to 24 hours after your workout.

1 HOLD IT STEADY

Todd Bumgardner, MS, CSCS*D, a strength and conditioning coach in Connecticut, likes to give his clients a heavy load that they hold isometrically for intervals. Shoot for loads between 75 and 85 percent of your one-rep maximum, and hold it for 30 seconds up to one minute before taking a break. "I start the work-to-rest ratio at 1:2 and progress it down to 2:1," Bumgardner says. Even though it's isometric, this is a form of high-intensity interval training,

which research shows boosts fat loss better than steady-state cardio and for far longer after the session is over.

2 KEEP IT MOVING

Load a weighted vest with 10 to 20 percent of your bodyweight and perform 15 to 20 minutes of continuous walking lunges. "This is an aerobic training method, but it ends up creating a decent oxygen debt," Bumgardner explains.

3 SWING IT

A study published in 2010 by the American Council on Exercise (ACE) shows that kettlebells can provide more intensity than traditional weight workouts, thereby increasing the EPOC effect. According to ACE, kettlebell training burns an average of 13.6 calories per minute and the EPOC effect adds another 6.6. That's 20.2 calories per minute or roughly 1,200 calories per hour, compared to 180 to 266 calories per hour for standard weight-training workouts. Kettlebells also offer tons of variety: You can structure entire workouts around swings, snatches, Turkish get-ups, and unilateral and bilateral moves.

4 CRAWL AWAY

Cardio workouts give you a decent afterburn. Want to improve your conditioning but hate running? (*So do we!*) Justin Grinnell, CSCS, CFL1, owner of State of Fitness in East Lansing, Mich. (mystateoffitness.com), suggests lunge-crawl combos: Do a spiderman crawl for 20 yards, then lunges for 20 yards. Keep it going for six consecutive minutes and you're done. "You'd be surprised the amount of EPOC you get from that," Grinnell says.

5 DO WHAT YOU HATE

"Any exercise that is inefficient for a given person will be great for EPOC," Bumgardner notes. "Essentially, do what you're not good at. If you're a great weightlifter but yoga is brutal for you, do yoga. You'll expend a ton of energy and in the process create a great EPOC environment." ■

For more early fall fat-burning ideas, turn to page 36.

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